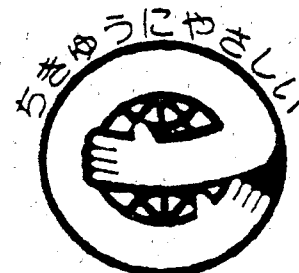
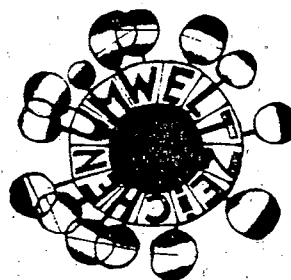





Status Report on the Use of Environmental Labels Worldwide



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STATUS REPORT ON THE USE OF ENVIRONMENTAL LABELS WORLDWIDE

September 8, 1993

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EXECUTIVE SUMMARY

The past several years have seen a marked increase in the public's awareness of and concern for a range of environmental issues both in the United States and abroad. One way in which the public, as consumers, seeks to lessen the environmental impacts of daily activities is by purchasing and using products perceived to be less environmentally harmful. Marketers, in turn, have responded to consumer demand by labeling particular products and packaging with environmental attributes (e.g., "package made from 35% post-consumer material"), advertising these environmental attributes, introducing new products, and redesigning existing products and packaging. The U.S. marketplace also faces the introduction of several third-party environmental certification programs as well as continued development of such programs in most of our major trading partners.¹ Government and private parties alike have acknowledged that this trend offers an opportunity to not only decrease the environmental impacts of the consumption patterns of the American public, but also to increase consumer education and sustain interest in environmental issues. This report provides extensive background research on the range of third-party environmental certification initiatives, both domestic and foreign.

In 1991, several petitioners requested 1) that the Federal Trade Commission (FTC) establish uniform national guidelines for environmental marketing terms, and 2) that efforts be made to ensure uniformity across all federal agencies that might have jurisdiction or interest in this area. To address federal uniformity, staff from the U.S. Environmental Protection Agency (EPA), the White House Office of Consumer Affairs (OCA), and the FTC met as part of the Interagency Task Force on Environmental Marketing Claims. In July 1992, the FTC responded to petitions from industry and testimony from interested parties, including state and local governments and environmental groups, by formulating (in consultation with the task force) and issuing voluntary guidelines for the use of environmental marketing claims. Prior to the FTC guidelines, individual state and local governments had enacted their own sometimes conflicting laws and regulations that define and restrict different environmental marketing terms. Because of this patchwork of state regulation and consumer protection enforcement, many corporations found it too risky to make what many considered to be legitimate environmental marketing claims. At present, no research has been published to determine what effects the FTC guidelines have in the marketplace and ultimately on environmental quality.

Beyond the use of environmental marketing claims, an increasingly common marketplace approach to pursuing environmental policy goals is third-party environmental certification programs (ECP), where an independent group evaluates products within a category according

¹ For the purposes of this paper, "environmental labeling" will refer to the broader practice of labeling products based on environmental considerations, including hazard/warning (negative) labels, certified marketing claims appearing on a product or shelf label, and neutral information disclosure labels. "Environmental Certification Programs (ECPs)" will refer to third party, positive, voluntary programs.

to their (relative) burden on the environment.² Such programs are active in more than 21 countries, of which some are major trading partners and competitors (e.g., Canada, Germany, Japan). Several ECPs are now active or will soon become active in the U.S. The state of California is also considering a limited program. These programs provide a market-based incentive for producers to develop new and less environmentally harmful products and processes. In the context of an increasingly global marketplace, U.S. manufacturers may need to meet the award criteria of foreign ECPs in order to compete effectively overseas; thus, foreign ECPs could be "exported" to the U.S. market.

For the purposes of this study, fundamental elements have been identified that are common to all types of third party product labeling, and five types of environmental labeling programs have been identified and categorized accordingly. First, all labeling programs are conducted by groups independent from marketers, and are considered 'third party' as opposed to 'first party' environmental claims made by marketers themselves. Second, participation in these programs can be voluntary or mandatory. Third, labeling programs can be positive, neutral, or negative; that is, they can promote positive attributes of products, they can require disclosure of information that is inherently neither good nor bad, or they can require (negative) warnings about the hazards of products.

The table below illustrates the five types of environmental labeling programs identified by this classification system, and the properties they have. Books about the environmental impacts of consumer goods, although not programs per se, are included in the report because they compile and present some of the same information as environmental labeling programs.

Program	Positive	Neutral	Negative	Voluntary	Mandatory
Seal-of-Approval	x			x	
Single Attribute Certification	x			x	
Report Card		x		x	
Information Disclosure		x			x
Hazard Warnings			x		x
Books	x		x	--	--

Seal-of-approval programs identify products or services as being less harmful to the environment than similar products or services with the same function. Single attribute certification programs typically indicate that an independent third party has validated a particular

² The FTC has acknowledged that its guidelines do not preclude or prohibit the operation of an ECP. The guidelines do apply to ECPs inasmuch as the programs make claims for products.

environmental claim made by the manufacturer. **Report cards** offer consumers neutral information about a product and/or a company's environmental performance in multiple impact categories (e.g., energy consumption, water pollution). In this way, consumers can weigh for themselves what they think the most important environmental impacts are. These three types of programs, by virtue of their voluntary nature, have been grouped together as environmental certification programs (ECPs).

Information disclosure labels, like report cards, are neutral, disclosing facts about a product that would not otherwise be disclosed by the manufacturer. Unlike report cards, they are required by law. **Hazard/warning** labels, or negative labels (similar to health advisory labels found on cigarette packaging) are mandatory warnings concerning the product's adverse environmental or health impacts. **Books** about the environmental impacts of consumer products tend to advocate for or against specific products or categories, and so are either positive or negative for each product rated.

In its 1992 appropriations package for the U.S. Environmental Protection Agency (EPA), Congress stated that "confusion in ecolabeling has negative implications for consumer protection, environmental improvement, and trade with other nations which have already established their own standards in this area." To address potential problems, Congress directed the Administrator "to develop a comprehensive, uniform, and national environmental labeling strategy that is consistent with international standards."

Unlike ECPs in the U.S., ECPs are viewed by many foreign governments as one of several policy tools available that can be used to achieve environmental quality goals, where they supplement traditional regulatory controls and fiscal incentives. Studies have shown that ECPs may significantly influence consumers' purchasing decisions, allowing governments to further their environmental agendas. This report addresses two of the major policy issues surrounding the development of new environmental certification programs, as well as the operation of existing ECPs: the measurement of program effectiveness and international harmonization.

As part of its background research on the numerous initiatives worldwide, the Agency is interested in determining the potential benefits and limitations of consumer-oriented initiatives such as ECPs. Consequently, it is important to make the distinction between the popularity of ECPs and the evidence of their effectiveness as agents of change in consumer behavior, ultimately improving environmental quality. The effectiveness of an ECP can be examined in terms of its impacts on consumer awareness, consumer acceptance, consumer behavior, manufacturer behavior, and environmental benefit. Each of these elements is dependent on the others, and provides important insight into the driving forces behind the success or failure of an environmental label. Unfortunately, there is very little in-depth information in these areas. While extrapolations can sometimes be made from studies of other types of labels, the conclusions drawn from them are tenuous at best; additional research regarding ECP effectiveness is needed.

Another issue confronting the various ECPs around the world is harmonization. Differences in product category definition and stringency of standards could potentially cause consumer confusion and act as trade barriers. International organizations such as the International Chamber of Commerce, the International Standards Organization, and the United Nations Environment Programme, have made recommendations on ways to standardize ECPs and increase the exchange of information and primary research being conducted by various programs. If successful, the European Community's (EC) program will address this problem within Europe by harmonizing environmental labeling throughout the 12 EC states.

This report examines public policy issues related to environmental labeling and the status of ECPs worldwide. Chapter 1 gives an overview of the status of environmental marketing in the U.S. Chapter 2 and the Appendix summarize existing ECPs in the U.S. and abroad. Chapter 3 addresses existing research relevant to projecting the effectiveness of U.S.-based environmental labeling initiatives. The Appendix provides details for each of the labeling programs included in the report as well as a select bibliography covering a number of labeling initiatives as well as life cycle analysis issues.

1. THE STATUS OF ENVIRONMENTAL MARKETING IN THE UNITED STATES

News coverage of environmental concerns has been increasing steadily since the latter half of the 1980s. Global issues such as climate change and stratospheric ozone depletion, national news stories such as the Exxon Valdez oil spill, and local issues such as drinking water contamination and municipal solid waste management have increased public awareness and concern about environmental matters facing the United States. National events such as Earth Day have emphasized choices that individuals can make to decrease their impact on the environment; a large number of consumers have responded by purchasing and using products they perceive to be less environmentally harmful. Several surveys indicate that a majority of Americans consider themselves to be environmentalists and would prefer to buy products with a lessened environmental impact when quality and cost are comparable. (Abt, 1990; Gutfeld, 1991)

Since 1989, the U.S. marketplace has seen a dramatic rise in the number of new products making environmental claims (e.g., "ozone friendly," "recyclable"). Despite the fact that virtually all products have some adverse environmental impact, consumers are often confused about the meaning of specific environmental marketing claims, and often mistake product claims as generically "good for the environment." Also, some claims made by marketers have been blatantly unclear and misleading. Consequently, marketers have been subject to litigation and regulation by a growing number of local, state, regional and federal agencies, and are increasingly wary of making new claims. (EPA, 1993) The FTC's *Guides for the Use of Environmental Marketing Claims*, released on July 28, 1992, are expected to alleviate much of the confusion for consumers and marketers alike. The guidelines are also intended to provide (nationally) consistent meanings and interpretations in the marketplace, thereby reducing legal risks for marketers wishing to make environmental claims. However, no studies of the guidelines' effectiveness have yet been published.

An additional development in the marketplace is the rise of third-party, positive environmental certification programs (ECPs), which are now actively reviewing products and issuing awards in the United States. These programs, known in countries abroad as "ecolabeling" programs, strive to make credible, unbiased, and independent judgments in certifying a claim or product. They are expected to provide the consumers with information and/or assessments that are often not apparent or not available to the consumer, that can help the consumer make purchasing decisions based on the environmental impacts of products. Because private U.S. programs are not associated in any way with the federal or any state government, their activities are not now linked directly to U.S. environmental policy goals. In contrast, ECPs in other countries are either controlled by the government or by an independent body with government oversight. They are often used as "soft policy tools," harnessing market forces to help reach certain national environmental goals.

For the purposes of this study, a classification system was prepared defining various types of environmental marketing, as illustrated in Figure 1-1. First party activity, performed by marketers on their own behalf, includes claims, cause-related marketing, and other activities designed to promote the environmental attributes of either specific products or the company generally. A major part of third party activity, and what this report is primarily concerned with, is environmental labeling programs. Participation in environmental labeling programs can be voluntary or mandatory for marketers. Mandatory programs, usually under state or federal law, require either hazard/warning labels (such as pesticide warning labels) or information disclosure labels (such as EPA's Fuel Economy Information label).

Voluntary programs, categorized as environmental certification programs (ECPs) in this report, are associated with positive or neutral labels; that is, they act either as a positive selling point in encouraging the sale of the product, or as a neutral disclosure of the environmental impacts of the product. The three approaches to environmental certification identified are seal-of-approval, report card and single attribute certification. Environmental labeling programs are discussed in greater detail in Chapter 2.

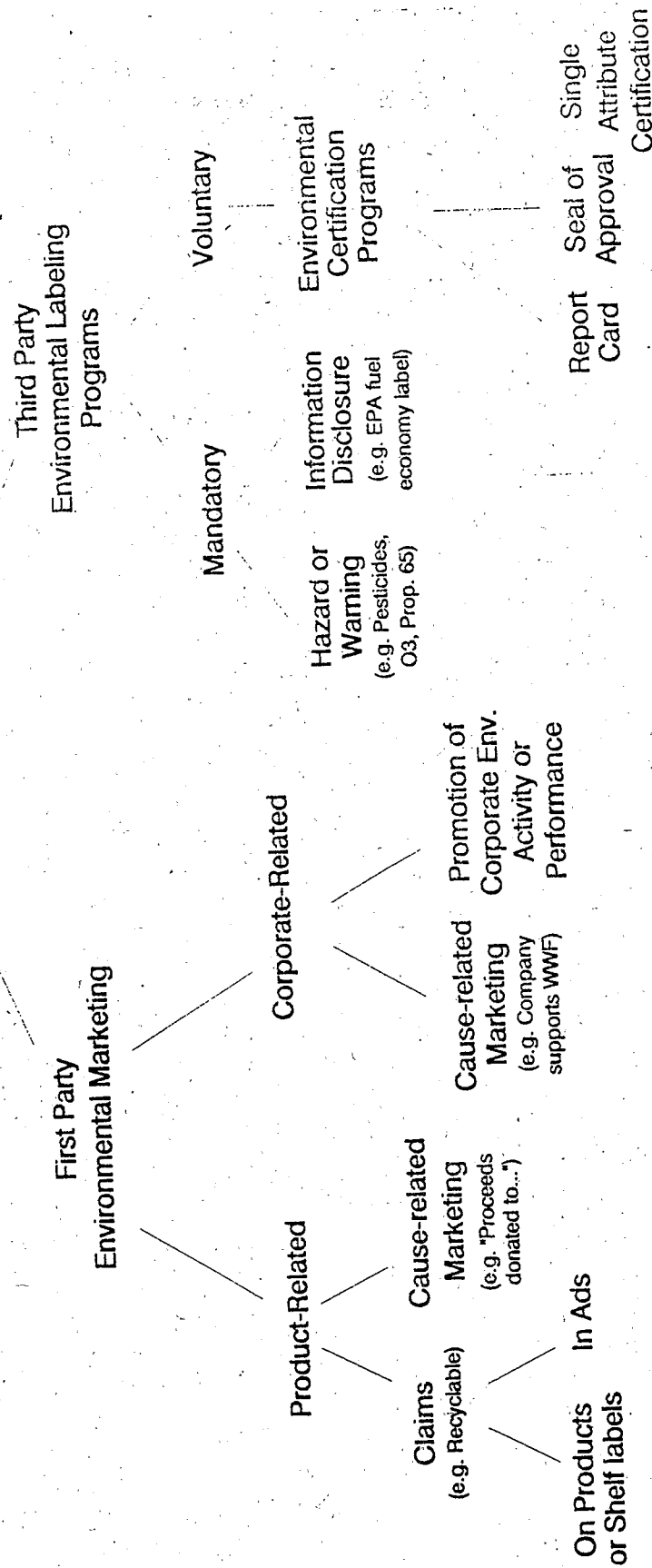
1.1 Environmental Marketing Terms

Marketers have responded to consumer demand for "green" products by advertising the environmental attributes of their products, introducing new products, and/or redesigning existing products and packaging to enhance their environmental characteristics. Generally, in the absence of ECP programs, such as those in Germany and Canada, marketers in the United States have used environmental marketing terms on product packaging and in advertising. The environmental marketing claims used to describe products and packaging range from vague, general terms such as *earth-friendly* or *natural*, to more specific claims such as *contains no chlorofluorocarbons* or *made with x percent postconsumer recycled materials*.

The rapid proliferation of poorly-defined or ambiguous environmental terms over the last several years has led to consumer confusion and skepticism. FTC guidelines were formulated in response to increasing amounts of legal activity related to environmental claims. While not legally enforceable themselves, FTC guidelines "provide guidance to marketers in conforming with legal requirements." (FTC, 1992) The guides do not define terms, but give examples of more and less acceptable ways to present the following claims: general environmental benefit claims; degradable, biodegradable and photodegradable; compostable; recyclable; recycled content; source reduction; refillable; and ozone safe and ozone friendly.

The success of market-driven environmental initiatives depends in large part on consumer awareness and knowledge of environmental issues. To use the market effectively as an environmental policy tool, there must be some assurance that environmental claims made on products are truthful and result in real environmental quality improvements. Furthermore, some advocates of environmental marketing initiatives point out that such activity should be linked to national environmental policy goals as well as to consumer concerns. When consumers are misled by trivial or false advertising, environmental policy goals driven by those concerns are

Figure 1.1:
Environmental Marketing



undetermined. The effectiveness of all environmental marketing activities as policy tools can be ensured through several means: industry self-regulation, governmental intervention by regulation or voluntary initiatives, or third party certification by public or private groups.

1.2 Consumer Confusion

Consumer confusion over environmental marketing terms is exacerbated by several factors characteristic of environmental attributes. Advertising claims that cover easily-discernible attributes of a product, such as *soft* or *tasty*, are readily evaluated by a consumer who can judge the validity of claims against his or her own experience. However, environmental claims such as *ozone-friendly* pertain to product characteristics with which a consumer generally has little or no experience or cannot physically perceive; consumers cannot therefore evaluate the credibility or value of the claim. In addition, environmental claims such as *recyclable* and *compostable* relate to more than just the inherent qualities of the product being promoted; they also reflect the context in which a product is used or disposed. For example, by promoting a product as recyclable, marketers are making a claim over which they have virtually no control, since they cannot always control a consumer's access to the appropriate recycling infrastructure. Finally, some terms used in environmental marketing, such as *source-reduced*, are not normally encountered by consumers and are therefore often poorly understood. (ERA, 1990)

This lack of standardized usage, and consumer misunderstanding of environmental terms, often leads to specific environmental claims being perceived to mean "good for the environment," even though virtually all products are associated with some adverse environmental impacts. In fact, surveys measuring consumer understanding of environmental marketing terms indicate that consumer comprehension, which varies among terms, is for the most part quite low. Hurried point-of-purchase situations are likely to further decrease this comprehension. Many of the terms most commonly used by marketers, such as *recycled* and *biodegradable*, are also the most widely understood by consumers, suggesting that consumers learn about environmental issues if exposed to such information over time. Educating consumers may therefore be as important as developing environmental marketing guidelines or other regulatory programs to enable them to make informed purchasing decisions. (ERA, 1990; Cude, 1991)

1.3 Marketers' Difficulties

As the use of environmental claims in advertising experienced a rapid increase, so too did the regulation of those claims. Before the FTC guidelines were issued, at least 40 separate citizen, industry, state, regional, and federal groups had made formal proposals that define environmental marketing terms. Of these, 11 states had enacted 17 environmental marketing claim laws, each law binding within that state's borders. Many national marketers are concerned about this "patchwork" of environmental labeling laws, arguing that compliance is becoming expensive and difficult. (EPA, 1993)

State-level activities include a number of initiatives. In addition to the enactment of state laws specifically regulating the use of environmental marketing activities over the past few years, state attorneys general and others have initiated a greater number of truth-in-advertising legal actions against allegedly misleading advertising related to products' and companies' environmental attributes and performance. A task force of state attorneys general has jointly issued two status reports, the *Green Report I* and *II*, including their recommendations for federal, state, local, and industry actions. At the same time, different advocacy groups have organized local, state, and national publicity campaigns to increase scrutiny of marketers' claims.

Federal activity has been concentrated in the FTC, the U.S. EPA, the Office of Consumer Affairs (OCA), and Congress. The FTC held hearings to gather information and to assist in responding to petitioners' requests for guidance. The hearings, in combination with other joint research by the Commission, undertaken with EPA and OCA, resulted (in July 1992) in the development of guidelines for the use of environmental marketing claims, with specific guidance for eight categories of claims. The U.S. EPA also held hearings and proposed definitions for recycling terms. Congress proposed but did not act on the Environmental Marketing Claims Act of 1991. Provisions in this bill would specifically authorize the U.S. EPA and FTC to jointly regulate environmental terms, and would also define and set standards for a number of the same terms FTC covered in its guidelines, with these definitions having the force of law. The bill was included in the Resource Conservation and Recovery Act (RCRA) reauthorization bill in 1992, but this too was not enacted.

Before issuing guidelines, the Federal Trade Commission chose to review deceptive environmental advertising on a case-by-case basis, with the expectation that settlements against misleading marketing would serve as examples to marketers. The large number of legal actions resulted in a great demand from industry groups, as well as consumer and environmental groups, for guidance to help avoid costly and time-consuming litigation. Between October 1990 and June 1992, at least 48 separate actions were taken against marketers for misleading or deceitful environmental advertising.³ These actions include those brought by the Task Force of State Attorneys General and individual attorneys general (10 cases), the New York City Department of Consumer Affairs (15 cases), and the FTC itself (11 cases). (EPA, 1993)

The most prominent private activity has been the voluntary self-regulation of the advertising industry by the National Advertising Division (NAD) of the Council of Better Business Bureaus. The NAD has heard more than 3,000 complaints about unfair advertising practices since 1972 (EPA, 1992). Between October 1991 and June 1992, it heard 12 cases pertaining to environmental advertising claims. Although its oversight relies on voluntary changes by the parties involved, it has been willing to refer cases where agreement could not be reached to the Federal Trade Commission. (EPA, 1993)

³ The highest number of actions were taken against claims of biodegradability in plastics, followed by actions against environmentally safe/friendly, nontoxic/nonpolluting, ozone friendly, recycled, recyclable, and degradable. All but six cases ended in agreements by the manufacturer to modify or discontinue the claim in question; three were found to be substantiated, one was dropped, and two were pending as of Spring 1993.

All of this regulatory and enforcement activity has succeeded in decreasing misleading marketing activity, but it has also caused some marketers to stop using terms that are generally considered to be acceptable. For many corporations, the risk of legal action and adverse publicity outweighs the expected benefit from increased consumer response. As might be expected, some marketers are dropping terms over which other corporations have been sued. Others are wary of making new claims when they have been challenged on previous environmental marketing claims. (EPA, 1992b) Procter and Gamble, Kraft, and several other major consumer product companies announced that they will no longer make certain environmental claims due to the lack of consensus as to which terms can be used legitimately for their products. (Lawrence, 1992) As the National Food Processors Association (NFPA) argued in its petition to the FTC, marketers need "safe harbors" in which they can make real environmental claims without fear of being sued. (NFPA, 1991)

1.4 Reversing Growing Skepticism

The confusion and growing marketplace complexity surrounding environmental marketing terms has begun to create indifference and distrust among consumers toward advertised environmental attributes, and a reluctance among companies to advertise environmental attributes. Some marketers are now adding complicated language to their product labels to avoid the liabilities associated with increasing numbers of federal, state, and local actions and regulations. (Lawrence, 1992)

There is some evidence that consumer skepticism, marketer doubts, and fear of litigation have resulted in declining environmental marketing activity. A recent U.S. EPA study found that the rate of new environmental marketing claims declined in the first half of 1992, after a steady upward trend. (EPA, 1993) A spokesperson for Church & Dwight, maker of Arm & Hammer products, explained that "The risks of getting involved in green advertising until [the labeling controversy is] sorted out are too high." (Reitman, 1992)

If the current mistrust of environmental marketing by both consumers and marketers continues, there is a danger that environmental marketing could lose its potential to be a viable environmental policy option in the U.S. Consumer skepticism may be reversed if the credibility and standardization of environmental marketing information can be ensured. In general, two approaches have been suggested by some stakeholders for the U.S. marketplace:

- promoting the existing guidelines for individual environmental marketing claims linked with responsible monitoring and enforcement; and/or
- developing guidelines for (and supporting) domestic ECPs.

In the time leading up to the release of FTC guidelines, there was strong consensus among marketers and state and consumer groups that some type of federal guidance on environmental marketing terms was needed. Because of the immediacy of the problem, most

advocated that federal guidance should take the form of voluntary guidelines rather than enforced standards; guidelines are more flexible and can be implemented more quickly.

Although it is too early to discern their effectiveness, there has been widespread industry support for the FTC guidelines. At the same time, industry has a number of reservations about third-party ECPs. A prominent concern is that companies are not willing to let an independent private party dictate standards for industry to follow. Some of the criticisms are that: 1) companies will lose some control over their own production processes and marketing decisions; 2) an independent certification company may not be stable and credible, and the reputation of companies associated with it may be tarnished; 3) competing private labels will compromise the effectiveness of each; and 4) lack of a label or seal will be equated with being denied an award.

On the other hand, there have been some calls for federal action to 'level the playing field' for ECPs. Proposals for additional research and investigation include: public review of ECPs; development of uniform program operating principles; guidance on product evaluation methodologies; assistance in developing data sources; and harmonization with programs in other countries.

Support for an effective ECP has come from consumer and environmental groups. As one consumer advocate indicated, "the ultimate solution for all of our green consumer dilemmas would be to have one commonly accepted seal-of-approval on packages, certifying that a product had met a set of standards for environmental responsibility." (Makower et al., 1991)

Another cause for interest in building a coherent U.S. ECP is the fact that other nations, including prominent American trading partners, have active ecolabeling programs. Among countries involved in environmental marketing, the United States is virtually alone in its emphasis on defining individual terms rather than developing a national program. Germany, Canada, Japan, the European Community and the Nordic Council, among others, have government-run or government-associated ECPs in place. With heightened interest in trade issues due to the General Agreement on Tariffs and Trade (GATT) and North American Free Trade Agreement (NAFTA) negotiations, ECPs are being examined both as potential barriers to trade and as an option to avoid barriers to trade.⁴ An ECP, for example, can effectively export its award criteria to foreign manufacturers wishing to enter its market.

⁴ An ECP could impede trade where its award criteria relate to manufacturing processes or waste management (which are not attributes of the product itself). Companies exporting to a foreign market with such award criteria might therefore need to alter their domestic production or waste management processes before they can receive an award and be able to compete. One condition for certification by the European Community ECP is compliance with relevant European Community environmental laws. Unless greater harmonization occurs, this requirement could present a barrier to the entry of foreign products into the EC market.

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2. DOMESTIC AND INTERNATIONAL ENVIRONMENTAL LABELING INITIATIVES

2.1 Introduction

While product labeling has been used in marketing since Underwriters Laboratories began operation in 1894, the newest developments in labeling have been in the area of environmental certification programs (ECPs). In recent years, particularly since 1989, the number of and interest in ECPs have grown. Currently, at least 13 programs are in operation in upwards of 21 countries (see Appendix).

Third party consumer product labeling can serve three functions in the marketplace: 1) as an independent evaluation and endorsement of a product, 2) as a consumer protection tool, and 3) as a method of achieving specific policy goals. As an independent endorsement of a product, a program can offer companies a selling point that is more credible than claims made on their own behalf. For consumer protection, labeling can provide product information that is not readily apparent or easily discerned, or is not a positive selling point and thus would not necessarily be supplied by the marketer. As a policy instrument, labeling can influence marketplace behavior, guiding consumers and producers to act toward public policy goals. A variety of approaches to product labeling have been developed, prompted by health and safety concerns, concerns about hidden operational costs and, more recently, about the environmental impacts of products.

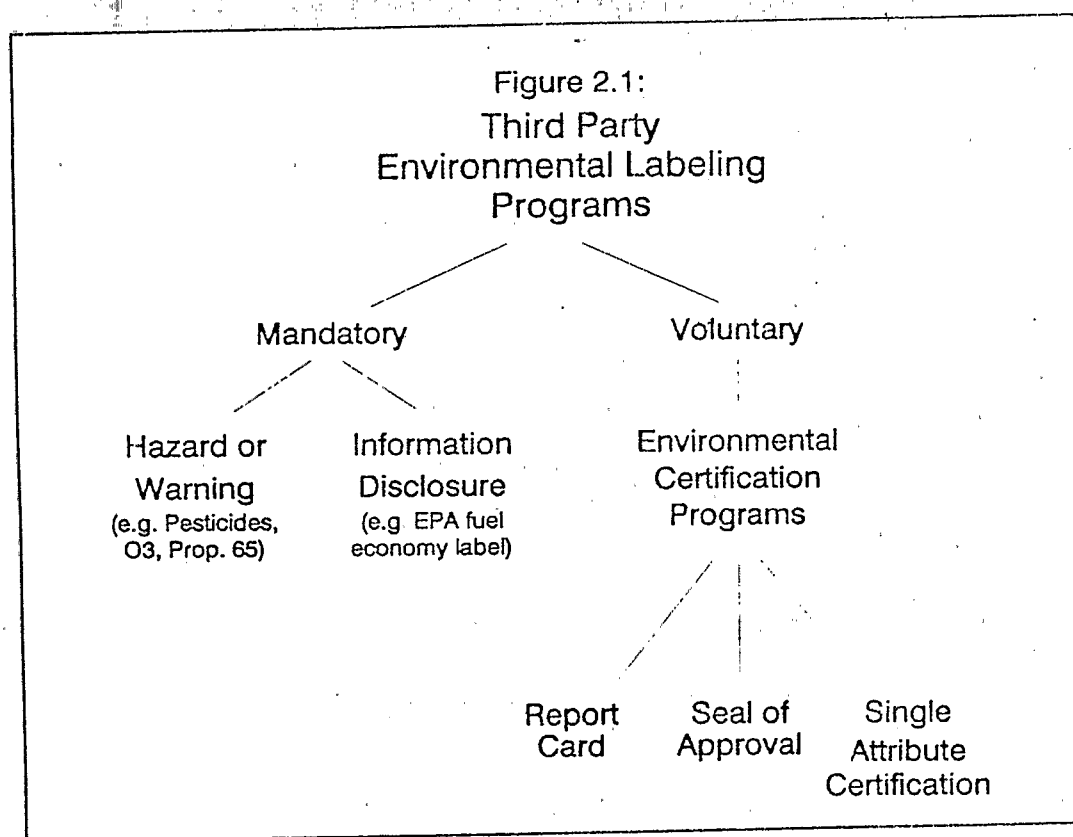
All third party product labels assume that better information will enable consumers to make more informed purchasing decisions. ECPs operate on the assumption that information on the environmental impacts of products tends to be more complicated than other kinds of product information, and that, in order to make purchasing decisions based on environmental considerations, consumers are in need of a clearly reported, expert analysis of those impacts. While other types of environmental labels focus on specific single issues, such as gasoline use, energy efficiency, and toxic substances, ECPs often try to convey information about multiple environmental impacts of products.

Another key difference is that participation in environmental certification programs is voluntary, and certification by an ECP is intended to be a positive selling point, encouraging the sales of products bearing the certification. In contrast, hazard/warning labels typically highlight a negative product attribute. As such, they either promote the safe use of labeled products or discourage sales of labeled products, thereby promoting the use of safer alternatives.

In addition to guiding consumer behavior, an ECP can provide a clear incentive for manufacturers to change to less harmful materials and production processes. In theory, if the market shares of products certified by ECPs increase, manufacturers of products that did not receive or seek the label will be induced to change or risk losing market share. Those manufacturers of products without a label may seek to qualify for the ECP's label, thereby reducing their adverse environmental impacts. Alternatively, they may try to differentiate their

products on another basis, such as lower price, greater convenience, or higher quality. To encourage continual technological and environmental improvements, several ECPs continuously raise the standards for an award so that only a select minority of products on the market meet the programs' requirements.

For the purposes of this study, certain fundamental elements have been identified that are common to all types of product labeling. As illustrated by Figure 1-1, environmental marketing performed by marketers themselves can be considered 'first party' activity, while that performed or required by an outside program can be called 'third party.' All environmental labeling programs are considered in this report to be third party programs, as shown in Figure 2-1. Participation in these programs can be mandatory or voluntary; most, if not all, mandatory labeling programs are required by state or federal law. Labeling programs can be positive, neutral, or negative; that is, they can promote positive attributes of products, they can require disclosure of information that is inherently neither good nor bad, or they can require (negative) warnings about the hazards of products.



Labeling programs have these elements in different combinations, causing some overlaps in the categorization illustrated in Figure 2-1. For example, the Environmental Report Card program run by Scientific Certification Systems (SCS) is a voluntary information disclosure

program, while EPA's Fuel Economy Information Program is a mandatory information disclosure program. Table 2-1 illustrates how the different categories of environmental labeling programs identified in this report share the basic elements.

TABLE 2-1

Program	Positive	Neutral	Negative	Voluntary	Mandatory
Seal-of-Approval	x			x	
Single Attribute Certification	x			x	
Report Card		x		x	
Information Disclosure		x			x
Hazard Warnings			x		x
Books ⁵	x		x	--	--

Seal-of-approval programs identify products or services as being less harmful to the environment than similar products or services with the same function. Single attribute certification programs typically indicate that an independent third party has validated a particular environmental claim made by the manufacturer. Report cards offer consumers neutral information about a product and/or a company's environmental performance in multiple impact categories (e.g., energy consumption, water pollution). In this way, consumers can weigh for themselves what they think the most important environmental impacts are. Information disclosure labels, like report cards, are neutral, disclosing facts about a product that would not otherwise be disclosed by the manufacturer. Unlike report cards, they are required by law. Hazard/warning labels, or negative labels (similar to health advisory labels found on cigarette packaging) are mandatory warnings concerning the product's adverse environmental or health impacts. Books about the environmental impacts of consumer products tend to advocate for or against specific products or categories, and so are either positive or negative for each product rated.

Most of the existing or planned government-supported programs, including those instituted by Germany, Canada, the Nordic Council, the European Community, France, Japan, the Netherlands, New Zealand, and Austria, are seal-of-approval programs. Green Seal, a private seal-of-approval program in the U.S., also falls into this category. In general, the programs judge products based on several award criteria using some abbreviated form of life

⁵ Although books on the environmental impacts of consumer goods compile and present some of the same information as do ECPs, they are not programs per se; thus, they are not included in Figure 2-1 but are covered in this chapter. Programs require either the voluntary or mandatory participation of marketers.

cycle assessment. If the product passes, the marketer is allowed to use the program's logo in promotion and advertising for the product. Other labeling programs, such as one operated by SCS, Scientific Certification Systems, certify particular single attributes. SCS also offers the Environmental Report Card, a broader information disclosure label showing pollution releases and resource use for products and companies. Information disclosure labels mandated by the U.S. government include the Energy Guide program for electrical appliances and EPA's Fuel Economy Information Program for cars and trucks. The U.S. EPA, California, and Vermont have mandatory negative labeling programs for hazardous and toxic materials. Books rating the environmental attributes of products include *The Green Consumer* and *Nontoxic, Natural and Earthwise*.

This report focuses mostly on seal-of-approval, single attribute certification, and report card type labeling programs, categorized together as environmental certification programs (ECPs). Most of the ECPs in this report share three main objectives: 1) to prevent misleading environmental advertising by providing an objective, expert assessment of the relative environmental impacts of products; 2) to raise the awareness of consumers and to encourage them to take environmental considerations into account in their purchasing decisions by providing them with accurate information on the environmental consequences of products; and 3) to provide manufacturers with market-based incentives to develop new products and processes with fewer environmental impacts.

2.2 Seals-of-Approval

2.2.1 Overview

Seal-of-approval programs award use of a logo to products judged to be less environmentally harmful than comparable products, based on a specified set of award criteria. First, product categories are defined based on similar use or other relevant characteristics. Award criteria are then developed for a product category. All products within a product category are compared against the same set of award criteria. How these product categories and evaluation award criteria are set defines the most important differences among the seal-of-approval programs currently in existence. It is a complex task requiring the consideration of many factors, including environmental policy goals, consumer awareness of environmental issues, and economic effects on industry.

Table 2-2 summarizes eleven seal-of-approval ECPs currently in operation.

TABLE 2-2

Countries/Regions in which a program is active	Program	Type	First award given
Germany	Blue Angel	gov't	1979
Canada	Environmental Choice	gov't	1989
Japan	EcoMark	gov't	1989
Nordic Council (Norway, Sweden, Finland, Iceland)	White Swan	gov't	1991
European Community (EC nations)	Ecolabel	gov't	1993 (expected)
US	Green Seal	private	1993
France	NF-Environnement	gov't	1993 (expected)
International	Flipper Seal-of-Approval	private	1991
International	SCS Forest Conservation Program	private	1993
India	Ecomark	gov't	1991
Singapore	Green Label	gov't	1992
Korea	Ecomark	gov't	1992

Other countries planning programs include Austria, New Zealand, and the Netherlands. Plans for ECP schemes have been dropped in Ireland and the United Kingdom in order to participate in the European Community scheme. During 1992, California EPA assembled a task force to begin consideration of a positive ECP; the State of New Jersey has also studied the issue. These programs and others are described in greater detail in the Appendix.

In general, seal-of-approval programs tend to have similar administrative structures. In a typical program, the government's environmental agency is involved to some extent, ranging from actually administering the program to simply providing advice or funding. The bulk of the responsibility rests in a central decision-making board composed of environmental groups, academics and scientists, business and trade representatives, consumer groups, and/or government representatives. Such board members usually serve for fixed terms (two to five years). Technical expertise is provided by the government, standards-setting organizations, consultants, expert panels, and/or task forces established for specific product categories.

Virtually all seal-of-approval programs follow the same overall certification process, with some minor variations. First, product categories are defined and chosen. With Japan's EcoMark as a notable exception (see Section 2.2.2), most of these programs then set award criteria using a form of life cycle study, in which potentially significant environmental burdens of a product are examined. Award criteria for that product group are then set to reduce those impacts considered to be the most important or relevant. Once the award criteria have been finalized and published, manufacturers are invited to submit products for testing and then, if accepted, apply for a license to use the logo.

The United Nations Environmental Programme (UNEP) held a "Global Environmental Labeling" seminar in September 1991, where experts defined the following basic features common to seal-of-approval ECPs:

- determination of award criteria based on life-cycle review of a product category;
- voluntary participation of potential licensees;
- run by a not-for-profit organization, including governments, without commercial interests;
- recommendations for product categories and environmental award criteria; determined by an independent, broadly-based board;
- a legally protected symbol or logo;
- open access to potential licensees from all countries;
- endorsement from government;⁶
- award criteria levels established to encourage the development of products and services that are significantly less damaging to the environment; and
- periodic review and, if necessary, update of both environmental award criteria and categories, taking into account technological and marketplace developments (UNEP, 1991).

The International Chamber of Commerce (ICC) has proposed several requirements for ECPs from the perspective of the business community. In particular, they emphasize that there should be no more than one label in each market to avoid consumer confusion, and that the key reasons for granting the environmental award should be printed on the product label itself. ICC also suggested that there should be a certain amount of harmonization among national programs, and that business should have a voice in the ECP process. (ICC, 1991)

Seal-of-approval programs also need to consider the incorporation of national policy goals into the program, appropriate and reasonable definition of product categories, inclusion of industrial and commercial products and services in the program, and the need to put environmental award criteria into context, recognizing important product attribute tradeoffs (e.g., reduced packaging vs. packaging needed for consumer safety, as with many food products).

⁶ This point had majority, but not universal, consensus.

2.2.2 Common Processes

Virtually all seal-of-approval programs follow the same process, with some minor variations. First, product categories are chosen and some form of life cycle review is performed. The review determines which points in a product's life cycle, from manufacture to disposal, contribute the greatest environmental burden. The programs vary widely in the rigor of their quantitative analysis. Based on this analysis, programs set criteria that products must meet in order to qualify for an award. There is usually a public review of program operations. After criteria are set, applications are received and awards are made.

Defining Product Categories

How product categories are defined can vary greatly between programs, and reflect the goals of the individual programs. With varying language, most of the programs state that they intend to promote the design, production, marketing, and use of products that have a reduced environmental impact and provide consumers with better information on the environmental impact of products. Nevertheless, the programs have differing ideas as to what environmental benefits can be gained through an ECP. Given the lack of consensus on product evaluation methodologies, the way product categories are defined may be the most important distinguishing feature between existing programs. There are significant differences in the effects created by a product category that is limited, for example, to compact fluorescent lightbulbs, versus a product category for all lightbulbs (whose energy efficiency would be just one of several award criteria).

The procedure for selecting product categories range from extensive research to determine the potential benefits of a new product category, to the selection of a product category based on loose guiding principles. One example is a Blue Angel product category designed specifically for low-noise mopeds. While noise may not appear to be a moped's most serious environmental impact, the standard suggests that the reduction of noise pollution is a higher priority in Germany than in other countries. This is borne out by the fact that Blue Angel has no fewer than seven low-noise product categories in its program, including one for "Sound-proofed Glass Collection Bins for Noise-sensitive Areas." Once a product category has been chosen, label award criteria for that particular category can then be developed.

The European Community's attempts at product assessment have been the most ambitious of any program. Product categories are decided upon by the Commission and assigned to a "lead country" for evaluation and standards setting. So far, 14 product category assessments have been assigned to member states. The EC program is currently the most intensively engaged in original research to gather environmental information on product categories, and at least two studies have been completed. While this strategy may provide a very thorough analysis, possible drawbacks include a long turnaround time and high costs.

In the middle range of the research spectrum is Canada's Environmental Choice Program. Environmental Choice does not perform original research to determine the environmental

impacts of products. Guidelines are set by "a review of currently available life cycle information," which is presented in technical briefing notes written for the program by consultants and reviewed by Environment Canada (Canada's environment ministry). These notes are literature reviews of research on the environmental impacts of a particular product category, an assessment of the industry and marketplace, suggestions for areas of possible environmental improvement and recommendations for how to set standards for the products effectively. A new consideration, recently added to the program by the Environment Minister, is an assessment of the economic impact of the label on an industry. (Hilliard, 1992)

At the opposite end of the spectrum from the European Community is Japan's EcoMark program. EcoMark follows "guiding principles" in its selection of product categories, its development of award criteria, and in the awarding of its labels:

- Products incur a minimal environmental burden when used;
- Products improve the environment when used;⁷
- Products incur a minimal environmental burden when discarded after use;
- Products contribute to environmental preservation in other ways;
- Appropriate environmental pollution control measures are provided at the stage of production;
- Energy or resources can be conserved with use of the product;
- Products comply with laws, standards, and regulations pertaining to quality and safety; and
- Price is not extraordinarily higher than that of comparable products.

The Promotion Committee, with advice from the expert Committee of Approval, "guided by the basic principles listed above, and aided by information provided by the applicant, decides whether to approve the category." Apparently there is no analysis or consultation with a group specifically assembled for that product category. One drawback of this process is that it runs the risk of awarding a product based on one attribute, when that product may have another environmental attribute that should not be promoted. For example, a paper product that is manufactured using a chlorine bleaching process (which generates dioxin-containing wastes) may receive an award based on its post-consumer recycled content. On the other hand, the program

⁷ According to Mr. Hashizume of the Japan Environment Assoc., "improve the environment" means "the reduction of the pollution, e.g., a kitchen sink strainer which has fine mesh, can catch fine materials in the waste water from a kitchen and prevents water contamination of rivers and lakes. Most of household waste water [flows] directly to rivers and lakes in Japan."

is able to move very quickly, awarding over 1,800 products in 47 product categories in less than three years of operation. It is also the only ECP that is currently self-financing. (Hashizume, 1992a)

According to Shigeyuki Hashizume of the Japan Environment Association, in the past, "product categories were selected by satisfying one ... environmental requirement. ... Now we are studying to introduce the life cycle assessment method to product categories selection." (Hashizume, 1992b) Some criticism of EcoMark implies that its credibility has suffered from a lack of more stringent research method. (*Business and The Environment*, 1993) It may also be that the program has set award criteria for the simplest product categories (i.e., categories that can be set without much analysis) and that future product categories will require more research.

Finally, two programs, the Flipper Seal-of-Approval and the SCS Forest Conservation Program are, in a sense, single issue seal-of-approval programs. Flipper, run by the non-profit environmental group Earthtrust, certifies "dolphin friendly" tuna while SCS certifies sustainable timber and forest management operations. The Flipper program focuses exclusively on discouraging fishing practices that maim and kill dolphins, and encouraging tuna companies to engage in "dolphin-friendly" activities. The program examines all facets of a tuna company's corporate policy that may affect dolphins, including fishing techniques of tuna suppliers, activities of subsidiaries and parent companies, and involvement in dolphin protection efforts. So far, Earthtrust has approved several major tuna companies, including Starkist. (Earthtrust, 1992) The SCS Forest Conservation Program evaluates timber operations based on the sustainability of timber resources, forest ecosystem maintenance and socio-economic benefits to the surrounding community. Each timber operation examined is awarded a score on a 100 point scale; those scoring more than 60 can claim to be "Well-Managed" while those in the top 10 percent can identify themselves as "State-of-the-Art." (SCS, 1993)

Setting award criteria

After the principal environmental impacts of products have been identified, award criteria (also called standards) are set to address these impacts. To date, seal-of-approval programs have been granted on a pass/fail basis, rather than on a rating system. In general, standards are set so that only a few products in a category (a frequently used goal is 10 to 20 percent of the market) can meet them. The idea is to provide incentives for manufacturers making products in that category to improve their products to meet the award criteria and receive the ECP's award. Programs also allow for changing the award criteria. When the percentage of products within a product category receiving labels increases, standards can be raised to limit the number of awards. In this way, a program can provide an incentive for continuous improvement.

In practice, standards are often set for just one award criterion, even though research has been carried out identifying multiple environmental impacts. This is done for a variety of reasons: it is easier to implement and set standards for one attribute, it focuses the attention of manufacturers on specific environmental goals, it educates consumers on specific environmental

impacts of a product category, and it can be less confusing to consumers. This simplified approach has some drawbacks as well: most importantly, such a seal does not reflect the overall impact of a product accurately; consumers may interpret the award to be a general seal-of-approval rather than an award for a specific attribute; it can limit the incentive for manufacturers to improve their production processes overall by targeting only one problem; and it can jeopardize the credibility of a program if it is promoted or interpreted as a general seal-of-approval. The report card approach to labeling, discussed in Section 2.4, addresses some of these problems.

The European Community is trying a more comprehensive approach. Its program first performs the most in-depth life cycle study of any program and then sets award criteria. The award process consists of two levels. The first level is known as a "hurdle" test, where certain award criteria are mandatory to qualify for further consideration. If a product passes these hurdles, it then faces a variety of other award criteria. It needs to pass a certain percentage of these secondary award criteria to qualify for a label.⁸ The standards for copier paper set by Denmark, for example, require that virgin pulp must come from sustainably managed forests, and that manufacturing processes and contents must meet quality standards in all EC states. If products meet these requirements, they are scored for the use of energy and natural resources, and for the amount of chemicals emitted to water and soil during manufacture (see Table 2-3). If a product does not exceed maximum allowable values for any category, and if it scores within the overall limit, it qualifies for a label.

The main advantage of this approach is that it is a more comprehensive assessment of the environmental impacts of a product. Also, it gives a company the flexibility to choose among different manufacturing processes and operating practices (with tradeoffs in emissions and energy consumption) and still meet the program's standards. One problem with this approach is that it may be prohibitively expensive. In order to set realistic standards for scoring, industry averages must be determined. This may involve collecting detailed information on manufacturing and chemical use from a significant portion of the industry, of which some members may not want to participate. For example, in the evaluation of detergents conducted for the EC by Germany, the study was "hindered by... limited support to the lead country with respect to submitting necessary raw materials/product/production-related data." (Poremski, 1991)

Public review of award criteria

Public review of a program's award criteria and process is assumed to be important in maintaining the program's integrity and its ability to address issues relevant to those parties affected by its actions. All other things being equal, a program that is "transparent," or open to public scrutiny, will have greater credibility in the eyes of consumers and manufacturers than will a program with little public review.

⁸ The UK National Advisory Group on Environmental Labeling also recommended this approach in a white paper written for the House of Commons.

Table 2-3 Copier Paper Standards for the EC Program		
Aspect of manufacture	Emissions	Points
Energy and natural resource use	Virgin fiber	6
	Recycled fiber	2
Sulphur dioxide emissions	less than 0.2	0
	0.2 - 0.5	1
	0.5 - 1.5	2
	1.5 - 2.5	4
Organics to water (COD)	less than 1	0
	1 - 10	1
	10 - 40	2
	40 - 60	4
Chlorinated organics (AOX)	less than 0.1	0
	0.1 - 1.0	1
	1.0 - 2.0	2
	2.0 - 3.0	4
Emissions to soil	no deposits	0
	controlled	1
	uncontrolled	4

Almost all programs attempt to be transparent to the public in their operations. Canada's Environmental Choice allows for a sixty-day public review period in the process of establishing criteria for a given product category. During this time, announcements of the proposed standards are sent to the press and to an "extensive mailing list," and are published in government publications, in the program's newsletter, and in major newspapers. Recommendations taken from this review are considered by the Environmental Choice board before final rules are promulgated.

In the U.S., Green Seal seeks public participation using press releases and mailings of proposed award information to interested parties. Although it does not publish in government publications, and its standards are not automatically published by any newspaper or magazine, its guidelines and activities tend to be fairly well covered in the American trade press.

Awarding labels

Once award criteria have been set, the awarding body accepts applications from manufacturers and awards labels to those products meeting the award criteria. Information on the products is usually provided by the manufacturers, or from third party testing organizations

whose fees are paid by the manufacturer. Programs can often request additional testing if needed. Manufacturers whose products pass then pay a fee to license the label for a specified time, usually three years. At the end of the licensing period, the manufacturer can reapply for the ECP's label, under current standards that may have been revised to reflect the state-of-the-art within the product category.

2.2.3 Retailer environmental labels

Many retailers in the U.S. and abroad have started their own programs to promote products with perceived environmental benefits. These efforts consist of shelf labels, in-store consumer education materials such as brochures and posters, and retailers' own 'house brands' that identify and promote products with certain environmental attributes. Retailers with environmental initiatives in the U.S. have included grocery, department and hardware stores, both mainstream national retailers such as Walmart and smaller alternative stores such as Whole Earth Access in California. Loblaw's, a large chain of grocery stores in Canada, has its own brand of "G·R·E·E·N" products, and Tesco Stores of England has a "Green Choice" product line. (House of Commons, 1991) In addition, a number of stores have opened that specialize in products with environmental features, such as the Body Shop or the Nature Company.⁹

Walmart was one of the first large retailers to promote environmental claims through in-store signage, starting in 1989, but was criticized by several environmentalists for having no means of independently verifying manufacturers' environmental claims. Walmart has since stopped its program. (Fisher, 1991; Walmart, 1992)

Whole Earth Access is a small chain of department stores in the San Francisco Bay area originally associated with the Whole Earth Catalog, a long-time source of environmental and socially conscious products. Whole Earth Access does some shelf labeling "to highlight products that are an alternative to mainstream America." (Tong, 1992) The labeling is determined by each merchandise buyer based on manufacturer claims, combined with whatever additional information each buyer deems necessary to verify the claim. Whole Earth stores have promoted certain products as being "environmentally friendly" for the 15 years of their existence.

In general, retailer labeling programs are not very systematic or comprehensive. Because of this, it is difficult to categorize them as seal-of-approval, single attribute certification, or report card types of ECPs. Since existing retailer programs do not systematically set award criteria or standards ahead of time, their intent is to draw attention to products, not necessarily to certify marketer claims or evaluate the environmental impacts of products. In this regard, they are similar to the final format of a seal-of-approval type of labeling program, though

⁹ Since this paper is concerned primarily with third party labeling programs, retailers with environmental product lines such as Loblaw's and Tesco will not be discussed here, nor will specialty stores carrying environmentally-oriented products. Two retailers' environmental product labeling efforts are described in the Appendix: those of Walmart and Whole Earth Access.

without the standards setting, evaluation, and authority of a more comprehensive seal-of-approval ECP.

2.2.4 Summary

A seal-of-approval program differs from those that certify manufacturers' claims because it is based on a broader assessment of a product's life cycle. In spite of this, a seal-of-approval program will often make awards based primarily on only one attribute, which it deems the most important, the most practical, or the easiest to improve. Germany's Blue Angel often makes awards based on a single attribute that is considered to be the most important environmental attribute of the product.

A seal-of-approval is also different from a neutral information disclosure program, such as the Food and Drug Administration (FDA) nutrition label, because it makes value judgments as to what is good and bad for the environment. It is different from SCS's Report Card approach, in that a seal-of-approval program selects what it defines as the most important environmental impacts from among the many impacts associated with a product. If such a seal is controlled by a federal government, as is true for most foreign programs, it is used as a policy instrument where the implicit value judgments are provided by the national environmental policy. A major exception is the United States' Green Seal, a private non-profit program not associated with the U.S. government.

Overall, the variations among programs are the result of different philosophies, different environmental policies, and different expectations of what is feasible. For the most part, countries pursuing ECPs have converged on the seal-of-approval label model as being sufficiently comprehensive and, above all, practical. Environmentalists, among others, however, have called for a more complete analysis of products, taking into account the inherent trade-offs in environmental impacts. As the body of knowledge about life cycle assessment increases, it is more likely to become an integral part of seal-of-approval labeling programs.

2.3 Single Attribute Certification Programs

Single attribute certification programs certify that claims made for products meet a specified definition. Such programs define specific terms and accept applications from marketers for the use of those terms. If the programs verify that the product attributes meet their definitions, they award the use of a logo to the marketer. The two single attribute programs currently operating are Environmental Choice Australia and Scientific Certification Systems' Single Claim Certification, a private program in the U.S.

2.3.1 Environmental Choice Australia

The stated goals of Environmental Choice Australia are to ensure that "environmental claims made about products and services are both meaningful and truthful" and that "consumers

and the providers of products and services are educated and informed on the environmental impacts of products and services." To this end, Australia is initiating education and information programs and environmental legislation that encourage manufacturers to lessen environmental impacts in their design and production processes, as well as the environmental claim verification program.

Environmental Choice Australia is administered and funded by the Australia and New Zealand Environment Conservation Council (ANZECC), and includes a scientific committee to define terms and verify claims, as well as a broad-based advisory committee to consult on decisions. The program is expected to coordinate closely with Environmental Choice New Zealand. (Doyle, 1992)

Environmental Choice's verification process gives government approval to product environmental claims that can be tested and quantified. If a product passes the required tests, its manufacturer may display "an agreed form of words" on the product. The Environmental Choice program categorizes environmental claims as follows:

- Claims that can be quantified;
- Claims dependent upon common understanding of terms used;
- Meaningless claims; and
- Misplaced or misleading claims.

Manufacturers applying for verification are not allowed to use claims that are meaningless or misleading. Environmental Choice Australia states that it will undertake random testing of products and services to ensure that providers of products and services remain in compliance with the program's requirements. Fines up to \$100,000 (companies) and \$20,000 (individuals) may be levied on those parties who misuse the Environmental Choice Logo.

2.3.2 SCS Environmental Claims Certification

According to SCS, Environmental Claims Certification is designed to provide "independent assurance that specific environmental claims made by manufacturers" are accurate and represent "significant environmental accomplishments." (SCS, 1992) To date, more than 500 individual products have been certified for claims in the areas of recycled content, recycling rates, biodegradability, energy and water efficiency, volatile organic chemicals content, and sustainable forestry.

During the certification process, the manufacturer is expected to release to SCS all information relevant to its claim. SCS then performs on-site inspections as well as a detailed records audit to verify information. SCS also consults independent databases to compare the manufacturer with the industry average. Based on this research, certification is then issued or denied. After a product has been certified, its manufacturer may display an "authorized certification emblem" accompanied by an exact description of the verified claim.

2.4 Report Cards

The report card approach to labeling involves categorizing and quantifying various impacts that a product has on the environment. Values for each impact category (e.g., kilograms of carbon dioxide released during manufacturing) are listed on the label and displayed in a bar graph. At this time, only Scientific Certification Systems is using this method of labeling, although the Council on Economic Priorities has published a book ranking companies on environmental as well as various social criteria. To date, Scientific Certification Systems has issued report cards to nine products.

Because report card labels provide the consumer with more information than standard seal-of-approval labels, the consumer has more specific information to consider when choosing a product.¹⁰ Whereas a seal-of-approval program might label two products with similar recycled content in the same way, a report card may highlight measurable differences in other impact categories between the two products. Consequently, the consumer does not have to base his or her decision completely on the analysis and judgments of the seal-of-approval labeling program. Another advantage of the report card is that it neither advocates nor condemns a product, but only provides information about the product. To some extent, this reduces the possibility of a consumer basing a purchase decision on a label awarded because of one or two specific environmental benefits of a given product, which may cause consumers to infer its superiority across all impact categories.

The major advantage of the report card approach is that it provides manufacturers and consumers with a large amount of information. Criticisms of the report card fall into two basic categories: concern over the difficulty of obtaining information, and the difficulty in displaying information clearly and simply.

2.4.1 SCS Environmental Report Card

SCS's "Environmental Report Card" is an information disclosure labeling program based on a life cycle inventory (LCI). The life cycle inventory is the first step in the more comprehensive life cycle assessment (LCA) described in Chapter 3. SCS Report Card evaluation is a multi-step process, involving identifying and quantifying inputs and outputs for every stage of a product's life cycle, site inspections, records audits, emissions sampling and testing, and quarterly monitoring. Under SCS's LCI, characteristics under the following categories are quantified for each stage of manufacturing, use, reuse, and disposal:

- Resource Consumption
- Energy Use
- Air Emissions
- Water Emissions
- Solid Waste Generation

¹⁰ Seal-of-approval programs are selected for comparative purposes because 1) they are most similar in terms of underlying analysis, and 2) a private seal-of-approval program exists in the U.S.

Once the LCI has been completed, the results are presented on an label or in public information materials in a table of figures accompanied by a bar-graph (see Appendix). The manufacturer pays for testing fees but does not pay any licensing or royalty fees.

2.4.2 Council on Economic Priorities - Shopping For A Better World

The Council on Economic Priorities (CEP), a New York-based non-profit group, has produced a book called *Shopping For A Better World*, which rates major manufacturers on a variety of social issues such as environmental awareness, minority advancement, charitable giving, and animal testing. Although CEP's report card reduces complex environmental issues down to a simple ranking within a single category (e.g., a corporation's environmental performance is graded as good, bad, or average), its wider scope may influence future product report cards designed to assess a manufacturer's performance on issues beyond environmental impacts.

2.5 Information Disclosure Labels

Like report cards, information disclosure labels are neutral, simply reporting facts that can be used by consumers as one piece of information in making a purchasing decision. Since the facts disclosed are not always positive selling features, and may not otherwise be reported by marketers, information disclosure programs are usually mandatory.

Perhaps the best known information disclosure label is the Food and Drug Administration's (FDA) nutrition label. Amended under the Nutrition Labeling and Education Act of 1990, the new food label is required to appear on all processed food sold in the U.S., with voluntary labeling on all unprocessed fruits and vegetables. (FDA, 1992) The government has required two other information disclosure labels that can be considered environmental in focus. One is the automobile Fuel Economy Information Program, which requires a label on all new cars and trucks sold. Begun as a voluntary program in 1973 by the Environmental Protection Agency, it soon became mandatory for auto makers to report the mileage rating of new vehicles. (Abt Associates, 1976)

Another information disclosure label is the Energy Guide program, which requires a label disclosing the cost of energy consumption of certain household appliances. Mandated by the Energy Policy and Conservation Act of 1976, the program is run by the Department of Energy and the Federal Trade Commission. The appliances covered include refrigerators, freezers, water heaters, clothes washers, dishwashers, and room air conditioners. These appliances tend to have a wider range of energy efficiencies than other appliances; consumers are thus more in need of a disclosure label to help them make purchasing decisions.

2.6 Hazard/warning labeling

Hazard/warning labels are mandatory negative labels that appear on certain products containing harmful or hazardous ingredients. Well known hazard/warning labels include the Surgeon General's warnings on cigarettes and the skull and crossbones label on poisons. Warning labels are also being applied to products to point out environmental hazards presented by the products. Labeling programs warning of toxic ingredients are currently being implemented by the States of California and Vermont, as well as the U.S. Environmental Protection Agency.

The State of California, by voter initiative, enacted the Safe Drinking Water and Toxic Enforcement Act in 1986. The Act, known as Proposition 65, creates a labeling program for products containing one or more of a list of chemicals determined to be carcinogenic and/or teratogenic, and prohibits the discharge of these chemicals to drinking water supplies. The law also provides an unusual enforcement mechanism, offering a bounty to any individual or group able to prove a violation of the law. In six years of operation, more than 500 chemicals have been listed, with warnings appearing on a wide variety of consumer goods.

The State of Vermont passed a state law in 1990 requiring all retailers stocking household products containing hazardous ingredients to so identify the products with shelf labels. The program's goal is to prompt consumers to avoid purchasing such products, thereby sending a signal to manufacturers to produce less hazardous products. The state also gives certain products deemed less toxic or nontoxic an "exempt" label, so that retailers can offer officially-sanctioned alternatives to the labeled products. After nine months of implementation, 58 percent of retail stores in Vermont had installed shelf labels. Along with the shelf label, there is a consumer education program that creates posters and brochures and is planning a media campaign. The state has a companion program for pesticides and commercial fertilizers.

The U.S. EPA, under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), requires warning labels on pesticides. Under the Toxic Substances Control Act (TSCA), the Agency may require warning labels on products containing specific hazardous substances, although in the 17 years since TSCA became law, only four product categories have been so regulated. Under the Clean Air Act Amendments of 1990, EPA recently began a labeling requirement for products made with or containing ozone depleting substances (such as chlorofluorocarbons, or CFCs).

Proponents of warning labels claim that manufacturers would remove the offending chemicals rather than suffer the market setbacks (adverse publicity and loss of market share) that a hazard/warning label might cause. They argue that this approach provides a stronger incentive to reformulate products (to avoid hazardous ingredients) than would a voluntary environmental certification program. If true, the results/benefits of such a hazard/warning labeling program would be more certain, with more certain results.

2.7 Books

The increase in public interest in environmental issues has been reflected by an increase in the number of books published on various environmental topics. Among the most popular of these has been books on how to be an environmentally conscious consumer. Three of these, *The Green Consumer* (and a successor, *The Green Consumer Supermarket Guide*), *Non-Toxic, Natural and Earthwise*, and *Shopping for a Better World* offer guidance on and ratings of the environmental impacts of specific consumer goods. The former two offer considerable background information on manufacturing techniques and packaging, essays on the environmental impacts of consumption, and general advice. The latter, discussed above in Section 2.4, presents a report card grading products and their producers on eleven different environmental and social standards.

Although these books do rate products, they are considerably different from environmental certification programs. Producers do not apply to the books for consideration, nor of course is there any government requirement. An obvious difference is that the books' ratings do not appear on products or in advertisements. Only *Shopping for a Better World* is designed to be taken to supermarkets to guide consumer purchase decisions at the point of purchase. It is unknown how effective the books are at guiding point-of-purchase decisions of consumers. The authors often cite sales of the books as proof of their effectiveness; they are undoubtedly effective as educational materials.

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3. SELECTED ISSUES AFFECTING ENVIRONMENTAL CERTIFICATION PROGRAMS (ECPs)

In this age of global marketing, the operation of environmental certification programs in domestic and international markets may have far-reaching effects. Two key issues stand out as being important. First, there is an underlying assumption that a voluntary and positive environmental certification program will be effective in changing the behavior of producers and/or consumers, leading to specified environmental benefits. There is, therefore, an interest in determining the effectiveness of such marketplace initiatives. Second, with the proliferation of ECPs in many countries worldwide, there is the concern that they may act as intentional or incidental barriers to international trade. Interest in the "harmonization" of program standards and procedures is rising as more programs become active and the activity of existing programs increases.

3.1 Effectiveness as Defined by Market Activity

An important distinction should be made between the popularity of ECPs and their effectiveness. ECPs are undoubtedly growing in popularity, as is evidenced by the increasing number of countries developing programs and the number of manufacturers proposing product categories and applying for labels. One question that arises, however, is, "are such programs effective?" This question is difficult to answer at present because many ECPs are just getting under way, and there is a lack of research and information on this subject. Nevertheless, discussed below are some of the possible ways to measure ECP effectiveness.

One way to measure the effectiveness of an ECP is the extent to which it achieves its stated objectives. All ECPs have approximately the same principal goals: 1) to circumvent misleading and false environmental advertising by providing an expert, objective assessment of the relative environmental benefits of a product; 2) to raise the awareness of consumers and to encourage them to take environmental considerations into account when making purchasing decisions; 3) to provide a market-based incentive to manufacturers to develop new products and processes that are less harmful to the environment; and 4) to cause market changes that ultimately result in decreased environmental impacts from consumer products.

Attainment of this last goal is in some sense the ultimate measure of a label's effectiveness. For example, a United Kingdom House of Commons report on labeling noted that "sales in Germany of paint labeled [by Blue Angel] as containing below 10 per cent solvents have grown to the extent that they now account for about 25 per cent of the non-trade sector of the market." (House of Commons, 1991) Also, the German government reported that the Blue Angel award criteria for paints, lacquers, and varnishes have reduced air emissions of organic solvents by 40,000 tons. (Federal Minister..., 1990) In theory, therefore, the best way to measure effectiveness is to assess the environmental benefit gained from program implementation. In practice, however, it is extremely difficult to link environmental benefits to specific actions or programs, and aside from a few anecdotal examples there is very little information in this area. Programs have therefore measured indicators of effectiveness that are

more easily quantified, such as changes in product formulation, the market share of certified products or consumer awareness of the program.

3.1.1 Effectiveness As Defined By Market Activity

The effectiveness of environmental certification programs may be measured by assessing their manifestations in 1) consumer awareness, 2) consumer acceptance, 3) consumer behavior change, 4) manufacturer behavior change, and 5) environmental benefit. The first four elements in the list above represent the steps that eventually lead to the fifth element and ultimate goal of an environmental certification program, namely environmental quality improvements. In other words, an increased level of consumer awareness of a program may lead to increased consumer acceptance, which in turn leads to changes in consumer and manufacturer behavior. A shift in manufacturer behavior means that manufacturers offer and promote environmentally preferable goods that carry ECP logos, while a change in consumer behavior means that consumers buy these goods instead of uncertified ones. Once consumer behavior changes, presumably the environment will profit from the decrease in the production, purchase, use, reuse, and disposal of goods that are more environmentally harmful than their certified alternatives.

If manufacturers change their processes to achieve ECP certification, then the issues of whether consumers actually prefer certified products, or whether environmental change actually occurs become secondary concerns. In this view, an ECP is a tool that operates on the manufacturers' desire to maintain or increase their market share, and is assumed to benefit the environment if it can establish itself in the market. Even absent consumer demand, companies may seek certification for their products to foster good public, stockholder, and/or employee relations. Measuring this kind of effectiveness could involve determining how many products are evaluated for certification, as well as the manufacturers' motivation to seek certification.

Unfortunately, there is very little in-depth information on the interactions among ECPs, the marketplace and environmental quality. Although there have been several consumer surveys that measured issues such as logo recognition, there are no known studies on ECPs that address changes in the market or benefits to the environment due to ECP certification.¹¹ Studies done on consumer perception of environmental marketing claims (not certification programs) suggest that there is a demand for and an awareness of environmental product information. According to an Angus Reid Group survey, a national-level system of standards (for environmental claims)

¹¹ For instance, a survey in 1992 on awareness and recognition of the Canadian Environmental Choice logo performed by the Environmental Monitor suggested that approximately 42 percent of Canadians have an awareness of the Environmental Choice logo. (International Environmental Monitor Limited, 1992) Paul Turcotte of Environmental Choice related that the Program couldn't afford to do a market changes study or environmental benefit study. (Turcotte, 1992) Japan's EcoMark program also performed an EcoMark awareness survey on Japanese citizens.

On the issue of consumer acceptance, Environmental Research Associates states that their survey revealed that when consumers were presented with the question of "Who can you trust [to give you accurate and unbiased environmental information]," environmental groups led all choices with a 37 percent acceptance rating. The government, on the other hand, fared badly, with only a 7 percent acceptance. (Environmental Research Associates, 1990)

would instill the most confidence in consumers, and an ECP would increase the credibility of environmental marketing. (EPA, 1993) These studies also find, however, that this interest in environmental information does not necessarily reflect the actual purchasing choices that consumers make. Because manufacturers use a wide spectrum of marketplace information, they may not wait for measured change in consumer demand resulting from certification actions. Published award criteria from an ECP alone may prompt manufacturers to change their products.

Examining this issue from a manufacturer's point of view, an ECP's effectiveness can be measured as a function of its benefits to manufacturers and its related ability to change their behavior to accommodate the program. If a manufacturer works to qualify for an award, if only to avoid losing market share to its certified competitors, then the program has been successful in changing the attitudes and actions of the manufacturer. An example of this scenario occurred when Blue Angel released award criteria for recycled paper. The German paper industry collectively boycotted the program, evidently feeling that the cost of modifying their paper-making processes outweighed the increased market share that they might gain from Blue Angel certification. However, after Scott Paper Co., an American paper company, applied for and received the Blue Angel for its imported paper, the number of German paper companies applying for certification rose dramatically.

Some manufacturers also see that there is a market niche that they can fill with their "green" products. They may see ECP certification as a valuable aid in capitalizing on that market, and use it as a way to boost sales, rather than simply keeping up with competition. A 1990 study found that slightly more than half of the respondents considered the environmental attributes of a product and/or company (and could name the product and its environmental attributes) when selecting a product in the past six months. (Abt, 1990)

Although some of these indicators of effectiveness are hard to measure directly, some conclusions can be drawn using available data. For instance, a shift in market share or a change in consumer and manufacturer behavior could be an indicator of the success of an ECP. On the other hand, many other factors (product promotion, media exposure, etc.) could also affect the market share, and it is difficult to isolate the effects of a program from other market forces. Other valuable information may include market surveys and feedback from the programs themselves as they try to accommodate to the market, manufacturers, and the public.

3.1.2 Extrapolating Effectiveness From Other Labeling Studies

Another way of looking at the potential effectiveness of an ECP is to extrapolate from effectiveness studies done on other types of product labels. A number of these are covered in the 1989 EPA report, including food and nutrition labels, household appliance energy efficiency labels, cigarette labels, automotive fuel economy labels, and drug and chemical labels. The report summarizes studies of the effectiveness of these types of labels by looking at their effects on consumer awareness, acceptance, and behavior change. It also takes into account the indirect effects of consumer behavior on manufacturer behavior.

However, many of these other types of labels have characteristics that are inherently different from those of environmental certification programs, making such comparisons problematic. In particular, mandatory hazard/warning labels may have very different effects on the consumer than a voluntary, positive environmental certification program. For instance, a 1986 study performed on the effectiveness of nutritional information found that posting information for positive, beneficial ingredients "had no significant impact on food purchases," but that posting information on negative, detrimental ingredients "had significant impact." (EPA, 1989) In another example, mandatory cigarette warning labels cannot be easily compared to ECPs because they do not present a choice to consumers: since all cigarette brands must carry the labels, no single brand stands out because of the label.

The original FDA nutrition information labels, which have since been revised significantly, were more similar to environmental certification programs than are warning labels. For instance, they were not mandatory; they were required only for foods whose advertising or packaging make nutritional claims, or if the product was fortified with nutrients. In addition, they shared the non-negative (i.e., not a disincentive) approach of ECPs. Consumer research has indicated that while there was widespread support for the old FDA labels, very few people actually used them in their purchasing decisions. Research has been conducted to find out why this is the case, and theories include: consumers found the labels too time-consuming to use; consumers do not have the necessary skills or information to effectively use the labels; and consumers do not feel a need for nutrition labeling. (EPA, 1989) On a related issue, focus group studies performed by the FDA suggest that consumers are more likely to respond positively to simple labels. (Lewis and Yetley, 1992)

It should be noted that even the old nutrition labeling program differed quite substantially from most environmental certification programs. Whereas all ECPs are completely voluntary, the FDA labels were still mandatory under certain conditions, as noted above.¹² In addition, the FDA nutrition label is an information disclosure label, providing neutral information to the consumer, while an ECP performs an advocacy role by recommending certain products over others.¹³

3.1.3 Summary of Effectiveness Discussion

The effectiveness of an environmental certification program can be examined in terms of its impacts on consumer awareness, consumer acceptance, consumer behavior, manufacturer behavior, and environmental benefit. Each of these elements reinforces the others and provides important insight into the driving forces behind the success or failure of an ECP. Conclusions regarding the effectiveness of ECPs are tenuous, however, due to the lack of effectiveness studies for most programs and to the problems associated with isolating their market and

¹² The newly revised FDA labels are mandatory for most foods.

¹³ It should be noted that the SCS Environmental Report Card in concept does not advocate any product, but rather acts as an information disclosure program.

environmental effects. Some limited information may also be extrapolated from effectiveness studies performed on other types of labeling programs, although most of these labels are sufficiently dissimilar from ECPs to make comparisons difficult.

3.2 Harmonization Issues

ECPs are currently operating in 24 countries, with more expected to be operational in the near future. Included in countries with active or planned programs are some of the major trading nations of the world. These programs differ in some fundamental ways, such as methods of operation, selection of products, how much public review is involved, and stringency of the award criteria. Consequently, there is some concern that the proliferation of ECPs, both domestic and foreign, could cause consumer confusion and, although voluntary, may act as barriers to trade. For example, manufacturers with a product already certified by one ECP may have to reformulate their product to meet the award criteria of another (country's) program. The harmonization of programs is therefore considered essential to the long-term success of ECP initiatives worldwide. Harmonization issues include information exchange (such as data sources and original research) and standardization of program elements (such as the use of terms, definitions and symbols, award criteria, and testing and verification methodologies).

With negotiations for the General Agreement on Trade and Tariffs (GATT) and the North American Free Trade Agreement (NAFTA) high on the agenda of trading nations, harmonization issues are becoming increasingly important as any potential barriers to trade are being scrutinized. Harmonization of programs can encourage trade among countries, or at least eliminate the programs as barriers to trade. Some have suggested that voluntary ECPs may be a preferred means of achieving environmental improvements compared with other, less trade-friendly approaches. ECPs can give consumers the information they need to be more actively involved with international environmental issues, without governments taking unilateral action against trading partners.

One example of how an ECP could bypass trade barriers is the Mexico-U.S. dispute about tuna fishing. The U.S. Marine Mammal Protection Act bans imports of tuna when incidental dolphin kills exceed certain limits. Since Mexican fishing fleets employ purse-seine fishing practices, a practice dangerous to dolphins, the U.S. government is currently enforcing an embargo against importing Mexican tuna. In September 1991, a panel of the General Agreement on Tariffs and Trade (GATT) agreed with Mexico that the U.S. tuna import embargo violates the GATT agreement and recommended that the GATT Council rule against the U.S. The Council has yet to hear the case. A GATT decision against the U.S. could result in Congress being forced to repeal the law. (U.S. OTA, 1992)

Some have suggested that voluntary ECPs are an effective means of pressuring foreign companies and countries to change environmentally damaging practices (so they may continue to compete effectively). At the same time, an ECP may avoid the danger of attempting to regulate business practices in other countries. According to Professor Jagdish Bhagwathi of Columbia University, the Economic Policy Advisor to the Director General of GATT, the

Marine Mammal Protection Act was perceived as a unilateral action not supported by GATT. GATT fears that such actions could lead to the protectionism that was rampant in the 1930s. "We therefore need something like a proper labeling, because it would be hard for me to boycott Mexican dolphin-unsafe tuna if I didn't know it was [unsafe]. To make voluntary boycotts effective you need labeling, and labeling can be required" without running the risk of protectionism. (Bhagwathi, 1992) One private ECP, the Flipper Seal-of-Approval program, already awards a seal to products made with tuna caught without harming dolphins.

Some groups, such as the International Chamber of Commerce, have emphasized the importance of having only one ECP, or one set of harmonized programs, in each market. (ICC, 1991) The United Nations Environment Program (UNEP) Industry and Environment Office has held seminars to bring together representatives of ECPs, in order to encourage the promotion of "Cleaner Production" technology, especially in Eastern and Southern Europe and developing countries. (UNEP, 1991) In addition, the International Standards Organization (ISO) has set up an Environmental Labeling Subgroup under its Strategic Advisory Group on the Environment (SAGE) to consider approaches to international standardization of national ECPs and to make recommendations on how to organize such work. The Subgroup met in Geneva in October 1992 to discuss standards for ECP terms and definitions, symbols, and testing and verification methodologies, as well as for environmental advertising. (ISO, 1992) In May 1993, SAGE met in Toronto to finalize recommendations to ISO on the formation of a new Technical Committee on Environmental Management. (ISO, 1993) U.S. EPA, the U.S. Trade Representative's Office, members of the U.S. delegation to ISO-SAGE, the International Chamber of Commerce, and the individual programs are all participating in formal and informal discussions surrounding harmonization issues. (EPA, 1992)

The European Community has addressed these concerns by introducing a single EC environmental certification program that is operated by the twelve member states while giving the European Commission final say on disputes or inconsistencies. The EC "environmental labeling programme" was established to ensure the integrity of a single European market and to achieve uniformly high levels of environmental standards across the EC.

To be effective, harmonization would cover most but not all elements of a program, such as product category definition, background research, product evaluation methodologies, award criteria, funding and fees, and program oversight. There is, however, little or no need to develop similar administrative structures across programs.

In addition to improving the transferability of awards and eliminating potential trade barriers, harmonization could reduce the operating costs of programs. By exchanging expertise and research among programs, duplicative efforts can be avoided. Harmonization of product category development and product evaluations would establish consistent methodologies, test methods, award criteria, and quality assurance procedures. With award criteria development costing up to \$100,000 or more for one product category, and outside funding of programs expected to decline in the long-term, strong financial incentives exist for greater harmonization. (Holmes, 1991)

According to one expert, however, there may be a number of impediments to harmonizing ECPs. For example, harmonization would require programs to relinquish a certain amount of autonomy and authority to the collective process, a political decision that may not be realistic. (Salzman, 1991) Harmonization could be viewed not as a negotiation of common program elements, but rather as a dynamic process leading to a consensus approach to labeling.

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APPENDIX

ENVIRONMENTAL LABELING PROGRAM SUMMARIES

The program summaries that follow in this appendix were compiled from documents provided by each of the programs, communication with program staff, and other publicly available materials. Each program was offered the opportunity to review and comment on a draft summary. Every attempt was made to verify the information provided, but independent verification of such information is often difficult.

Most program summaries present information using the following format:

- Introduction
- Administrative Structure
- Award Process
- Public Review
- References

Overview of Environmental Labeling Programs (as of Mid-1993)

Program Name	Country	Date Founded	# of Product Categories ¹	# of Products Awarded ¹	Page Number
Seal of Approval	Germany	1978	64	3600	44
Blue Angel	Canada	1988	26	700	50
Environmental Choice Program	Japan	1989	49	2300	56
EcoMark	Nordic Council (Sweden, Norway, Iceland, Finland)	1989	1	n.a.	64
White Swan	U.S.	1989	35	5	72
Green Seal	Sweden	1990	12	n.a.	78
Good Environmental Choice	New Zealand	1990	3	n.a.	82
Environmental Choice New Zealand	India	1991	16	n.a.	86
Ecomark	Korea	1992	12	96	90
Ecomark	Singapore	1992	5	n.a.	94
Green Label Singapore	European Comm.	1992	0	0	98
Environmental Labeling Programme	Netherlands	1992	0	0	104
Stichting Milieukeur	France	1992	n.a.	n.a.	108
NF-Environnement	International	1992	1	n.a.	114
Flipper Seal of Approval	U.S.	1993	—	n.a.	118
SCS Forest Conservation Program	U.S.	1989-92	n.a.	n.a.	122
Wal-Mart	U.S.	1978	n.a.	n.a.	126
Whole Earth Access	U.S.	1989	—	500	128
Single Attribute Certification	U.S.	1991	—	n.a.	132
SCS Environmental Claims Certification	Australia	1992	—	n.a.	136
Environmental Choice Australia	U.S.	1988	54	1600	140
EPA Energy Star Computers Program	U.S.	1991	—	9	144
Report Card	U.S.	1975	1	n.a.	152
<i>Shopping for a Better World</i>	U.S. (EPA)	1976	4	n.a.	160
SCS Environmental Report Card	U.S. (EPA)	1986	—	—	164
Negative Labeling	U.S. (California)	1991	4	n.a.	168
Pesticide Labeling	U.S. (Vermont)	1993	535 ²	n.a.	172
Toxic Substances Control Act (TSCA) Labeling	U.S. (EPA)	1975	7	n.a.	176
Proposition 65	U.S. (DOE, FTC)	1975	1	n.a.	180
Household Hazardous Product Shelf Labeling	U.S. (EPA, DOE)	1990	14	—	184
Ozone Depleting Substance (ODS) Label	U.S.	1991	19	500	188
Information Disclosure	U.S.				192
Energy Guide					
Fuel Economy Information Program					
Books					
<i>Nontoxic, Natural & Earthwise</i>					
<i>Green Consumer Supermarket Guide</i>					
Other Programs					

1. Because these programs are ongoing, these numbers represent the most recent information on the number of categories and awards. Each program is likely to have more categories and awards than what is listed.
 2. Includes about 450 industries using ODS as solvents and about 85 product categories "potentially releasing" ODS.
- n.a. = not available, — = not applicable

GERMANY'S BLUE ANGEL



GERMANY'S BLUE ANGEL

Introduction

Germany (formerly the Federal Republic of Germany) introduced the Blue Angel labeling program in 1977, making it the first country to implement a national ecolabeling program. The program was launched by the Federal Minister and the Ministers for Environmental Protection of the Federal States with the stated goals of 1) guiding the consumer in purchasing quality products with smaller adverse environmental impacts, 2) encouraging manufacturers to "develop and supply environmentally sound products," and 3) using the ecolabel as a "market-oriented instrument of environmental policy." (Umweltbundesamt, 1990) Most other ecolabeling programs in existence today are based to some extent on the Blue Angel program.

The German government sees the ecolabel as a "soft instrument" of environmental policy, since the program cannot establish binding requirements or bans and because participation in the program is completely voluntary. The Federal Minister for the Environment attributes the success of Blue Angel to "the growth of environmental awareness on the part of consumers and producers." (Umweltbundesamt, 1990) In a 1988 survey of 7500 German households, 79 percent were at least familiar with the ecolabel, and 68 percent correctly linked the ecolabel with the concept of environmental protection. Similar opinion polls have been performed on a regular basis, showing that the Blue Angel is perceived as "a reliable ecolabel." (Breier, 1993) The program grew slowly at first, issuing only 500 ecolabels in 33 product categories as of 1984. By mid-1993, however, the ecolabel appeared on 3503 different products in 75 categories. Most of the awarded products are from German manufacturers, with about 12 percent of all ecolabels awarded to non-German companies. (Salzman, 1991)

Structure

Three institutions participate in the four-stage award procedure.

- The *Environmental Label Jury* (ELJ) is a broadly based group made up of representatives from citizen, environmental, industry, and union organizations. Although the other institutions have considerable influence over the selection of product categories and award criteria, the Jury makes the final decisions on these issues. The Jury also has the authority to require the Umweltbundesamt (see below) to subject a product group to thorough examination and testing.
- The *German Institute of Quality Assurance and Labeling* (RAL) is a non-government, non-profit organization whose membership consists of 140 private-sector associations. RAL is responsible for organizing and chairing the expert hearings at which the standards for proposed product categories are discussed. After a product category has been approved by the Jury, RAL receives

applications from manufacturers and checks whether their products meet all Blue Angel requirements. RAL also completes civil law contracts with the individual manufacturers whose products qualify for ecolabels.

- The *Umweltbundesamt*, or *Federal Environmental Agency* (FEA) is the government agency in charge of environmental protection. Its role is to make the initial decision as to whether a new ecolabel proposal should be pursued, and then, if the ecolabel has been approved for further development by the Label Jury, to carry out the necessary testing and to draft an award criteria proposal. The *Umweltbundesamt* delivers its opinion to RAL, which then organizes expert discussion hearings.

The ecolabel is the property of the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety. The *Umweltbundesamt* usually acts for the Ministry.

Award Process

The Blue Angel award process consists of four stages (see diagram) in which all three institutions take part. New product categories may be proposed by any interested party. Once proposed, the *Umweltbundesamt*, RAL, and the Jury work out the award criteria, define appropriate tests, and set up expert hearings to discuss and develop the criteria proposal. The Label Jury makes the final decision on proposed categories and criteria. Once the category has been approved, RAL is in charge of working out civil law contracts for ecolabels with individual manufacturers.

Stage I: Choosing Product Categories

Product categories may be proposed to the *Umweltbundesamt* by any interested party. In practice, however, most are proposed by manufacturers seeking Blue Angel ecolabels for their products. The *Umweltbundesamt* reviews these proposals for suitability and plausibility regarding the claimed environmental benefits. The *Umweltbundesamt* then passes these proposals on to the Jury. The Label Jury decides which new ecolabel proposals ought to be pursued further, and orders the *Umweltbundesamt* to perform a close examination of the environmental impacts of the products under consideration. The Jury orders between five and fifteen of these tests every year.

Stage II: Setting Standards

As ordered by the Label Jury, the *Umweltbundesamt* performs tests on the new award category proposals to determine the most important environmental impacts of the product category. The *Umweltbundesamt* then drafts award criteria for the product category based on the data from those tests. The award criteria are then presented to an expert hearing organized by RAL.

Establishment of these criteria is a very involved process. The German government states that "the 'basic criteria' for the award of the ecolabel demand the consideration of all aspects of a product." As stated, these aspects include "the various 'phases' in the life of a product cycle (i.e., from manufacture to use and consumption to disposal)" and "the environmental damage caused by the product on the various environmental sectors (e.g., waste aspects, hazardous substances, emissions into air, water, and soil)." (Umweltbundesamt, 1990)

While a product's entire life cycle is examined initially in a life cycle matrix (similar to the EC matrix), award criteria cannot be practically based on every attribute that a product possesses. Instead, only the greatest points of divergence between products within a product category are considered. The final result of the matrix approach is the distillation of all possible environmental impacts to a few criteria, identified as the most important in distinguishing between a superior product and an inferior one in environmental terms. Safety and health issues are also considered in drafting criteria, but they are secondary to the environmental issues.

Stage III: Jury Decision on Product Category Proposals

Once the Umweltbundesamt has completed the draft criteria, the proposal is discussed at a closed door "expert hearing" organized by RAL. Experts are drawn from consumer, environmental, manufacturing, and trade union organizations. The expert panel critiques the ecolabel proposal and sends it to the Label Jury for review.

The Label Jury may accept, reject, or amend the proposal. The Jury aims for a consensus, but decisions are made by majority rule. Between 3 and 6 new product categories are approved each year, and it takes between 6 and 24 months to develop criteria for a new product category.

Stage IV: Awarding Ecolabels to Manufacturers

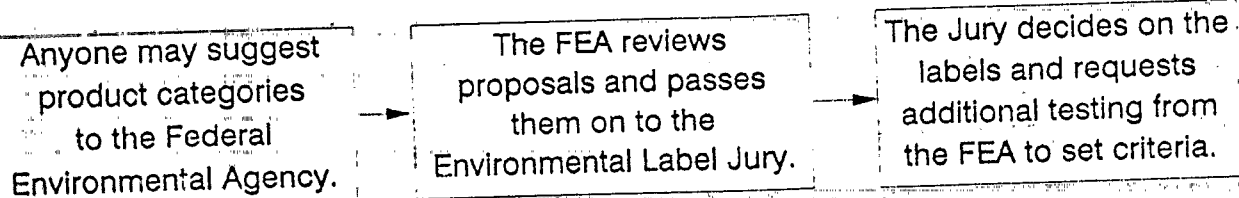
Once the award criteria for a product category have been established, a manufacturer may apply for an ecolabel. The manufacturer pays RAL a fee of 300 Deutschmarks (or about US \$190) as an application fee. If the product meets all of the ecolabel's requirements, then RAL and the manufacturer work out a civil contract defining the appropriate use of the logo. In addition to the application fee, there is an annual contract fee based on product sales, and a mandatory contribution to the Blue Angel's Advertising Fund.

The Blue Angel logo may be used only on the approved product itself and in direct advertisement for that particular product. The logo may not be used by a manufacturer to imply that other products have been reviewed by Blue Angel or have been awarded an ecolabel.

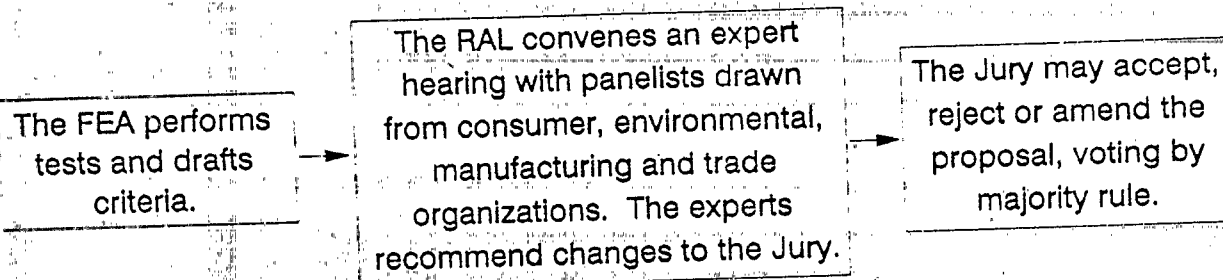
An award is valid for a maximum of three years, after which the manufacturer must reapply for the ecolabel, whose requirements may have changed in the interim. The validity period may be shorter for products whose technology is advancing rapidly. In theory, once a

Diagram of Germany's Blue Angel Labeling Program

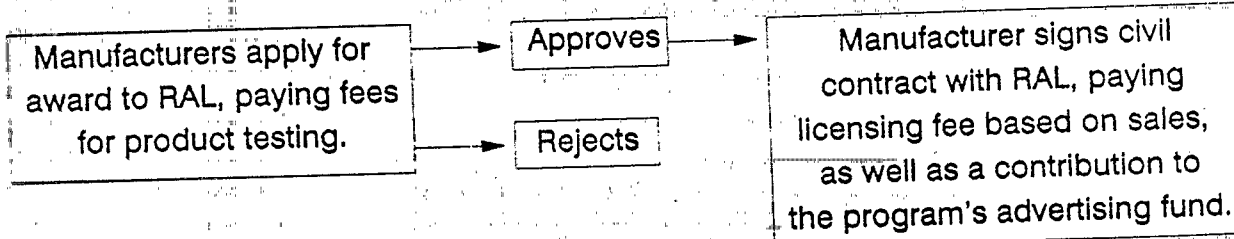
Stage I: Establishing Product Categories



Stage II: Setting Award Criteria



Stage III: Award Process



product category's award criteria have become the industry norm, they should be raised to push the market toward greater improvement.

Public Review Process

While consumer, environmental, manufacturing, and union organizations all take part in designing new product categories and award criteria, there is no official public review process.

Enforcement of Program

It is the responsibility of both the Umweltbundesamt and RAL to act against those who misuse the ecolabel. RAL deals with parties who have signed and broken a contract, while the Umweltbundesamt deals with all other unauthorized uses. According to a report by the OECD, "most problems from contracting parties occur when their advertisements imply that a whole line of products, rather than just one, qualifies for the label." (Salzman, 1991)

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CANADA'S ENVIRONMENTAL CHOICE[™] PROGRAM



CANADA'S ENVIRONMENTAL CHOICETM PROGRAM: THE ECOLOGOTM 14

Introduction

"The Environmental Choice Program was created by Environment Canada to help consumers identify products which ease the burden on the environment." (Consumer and Corporate Affairs Canada, 1991) The Environmental Choice Program is a voluntary eco-labelling program operating under the authority of the *Canadian Environmental Protection Act* (CEPA). It was founded in 1988 in response to growing consumer interest in environmental issues following the publication of the UNCED report "Our Common Future" and a multi-stakeholder report prepared by the Canadian Council of Resource and Environmental Ministers. A government position paper written in response to the UNCED report urged industry, government and consumers to "appreciate the collective drain we are imposing on our finite and fragile resource base" and challenged Canada to "bring environmental concerns into the mainstream of our thinking and decision-making." (Environmental Data Services, 1989) These reports and press reports of major environmental degradation world-wide provided a responsive climate for the announcement of the Program.

In the first four years of operation, Environmental Choice has published 27 final guidelines and has awarded the EcoLogo to over 750 products. The program's goal is to release approximately ten new and/or revised guidelines each fiscal year. It has received a generally favourable response from consumers and industry, with a June 1992 survey finding recognition of the EcoLogo at 42 percent among consumers. (*Environmental Monitor*, 1992) A licensee survey conducted in 1992 indicated that the majority (71 percent) of licensees either agreed or strongly agreed the Environmental Choice Program licensing was a good business investment. (Polak, 1993)

Administrative Structure

The Minister of the Environment has responsibility for the operation and activities of the Environmental Choice Program under CEPA paragraphs 5(1)(a) and (b) and 8(1)(b).

The Environmental Choice Advisory Board is an independent volunteer body which oversees the development of Environmental Choice Program product category guidelines. Sixteen members including a chairperson are appointed under CEPA Section 5(a)(a) by the Minister. The group has expertise in a variety of fields such as science, environmental advocacy, health, manufacturing, retailing, law, communications and economics.

The primary role of the Board is to provide the Minister with arms-length, objective advice and recommendations on the formulation of product- and service-specific environmental guidelines. The Board also recommends to the Minister proposed final guidelines for approval by the Governor-in-Council.

¹⁴This section was submitted by Environmental Choice Program Canada and incorporated directly into the appendix.

As an initiative under the Government of Canada's Green Plan, the federal Department of Environment provides both general support and direct management of the Environmental Choice Program. Specifically, Environment Canada provides core funding for the Program; scientific and technical advice; on-going liaison with provincial and other governments, and Environmental Choice Program staff who are responsible for the day-to-day management and operations of the Program.

The Environmental Choice Program's Technical Agency is retained under contract to Environment Canada. Under the direction of Environmental Choice Program staff, it checks products and relevant processes before and after licensing to determine whether they meet the Program's environmental criteria. It also administers the verification program including the provision of testing services when required.

Product category-specific review committees are constituted under the Environmental Choice Program as advisory groups to assist in the development of technically and scientifically defensible guidelines. Committee membership includes various independent experts and stakeholders having an interest in or being affected by the development of product-specific guidelines.

Guideline Development Process

Five environmental principles have been adopted by the Environmental Choice Program to help rank product categories for the development of environmental guidelines. They are also used to determine technical criteria that a product must meet in order to be considered a good environmental choice. These principles are to:

- encourage the efficient management of renewable resources to ensure their availability to future generations;
- promote the efficient use of non-renewable resources, including fossil fuels; facilitate the reduction, reuse and recycling of industrial, commercial and consumer waste;
- encourage the protection of ecosystems and species diversity; and
- encourage the proper management of chemicals in products.

Stage I: Selecting Product Categories

Product category suggestions are proposed to the Program and may come from business, industry, Advisory Board members, the general public, program staff, and other interested parties. From the suggestions received, the Environmental Choice Program annually identifies approximately 15 percent categories for guideline development. Selection is based on the products' degree of environmental and market desirability.

Stage II: Developing Guideline Criteria

Once the product categories are identified, the Environmental Choice Program engages a consultant to develop a detailed assessment of the product category in the form of a technical briefing note. The briefing note includes an environmental review spanning the product's life cycle, a profile of the industry, an assessment of potential economic impacts and of the consumer market for the relevant product type.

The Program staff then develop the draft guideline, based on the information contained in the technical briefing note, with the assistance of product-specific technical review committees. Once a draft is complete and approved by the Board Technical Subcommittee, it is released for a 60-day public review. Although the Canadian government is responsible for the Program, there is considerable public involvement through the public review of guidelines and the Advisory Board membership. The public review period is "the Program's opportunity to hear from manufacturers, consumers and any member of the general public with suggestions as to how to improve the criteria." (Environmental Choice, 1991)

Comments from the public may be incorporated into a final draft guideline which is presented by the Board to the Minister for consideration and approval. A final guideline is subsequently announced in the Canada Gazette.

Stage III: Certifying Products and Services

Once a guideline is established, manufacturers of products or purveyors of services covered by the guideline are free to apply for certification of their product(s) or service(s). Certified products may bear the Program's symbol of certification — the EcoLogo. The following are the steps in the certification — the EcoLogo. The following are the steps in the certification process:

- a) Application — Manufacturers of products apply to the Environmental Choice Program for use of the EcoLogo and technical compliance verification testing of their products by the Technical Agency.
- b) Verification — A Technical Agency inspector visits plant sites to assess products and processes against Environmental Choice criteria. Based on findings, the Technical Agency makes a recommendation to the Environmental Choice Program on whether to certify the product(s).
- c) License — The license agreement authorizes the use of the EcoLogo on and/or in association with products found to meet Environmental Choice criteria (i.e., "certified products"). The licensee agrees to pay an annual license fee and to maintain compliance with Environmental Choice Program licensing requirements and guideline criteria.

- d) Fees — Annual license fees charged by the Program are based on the gross annual sales of certified products and currently range from \$300 to \$5000. Testing and verification fees are charged separately by the Technical Agency, on a cost-recovery basis.

The Environmental Choice Program also publishes a free newsletter called EcoLogo. It had a \$2.0 million advertising budget in 1992/93 during which time it ran 30-second television commercials that were broadcast on national networks, as well as newspaper and magazine advertisements. The Environmental Choice Program has sponsored a public television series on environmentally responsible cottage maintenance, with licensees purchasing 15-second commercial spots. It has produced a 12-page promotional insert with licensees, which appeared in the May 11, 1992 issue of Maclean's magazine.

For more information about the Program, contact:

Environmental Choice Program (613) 952-9440 (telephone)
107 Sparks Street, Suite 200 (613) 952-9465 (facsimile)
Ottawa, Ontario
K1A 0H3

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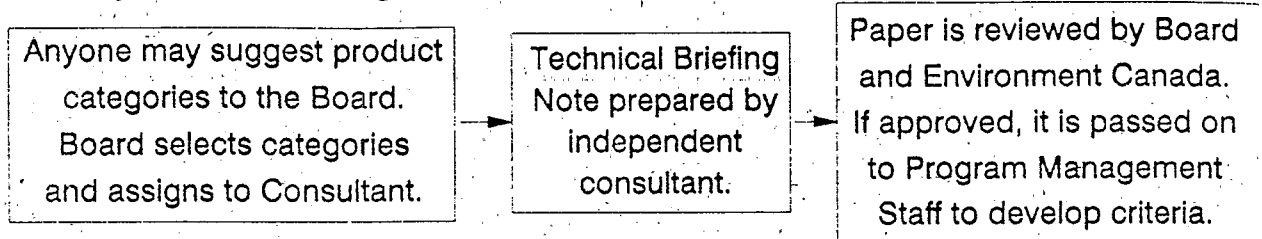
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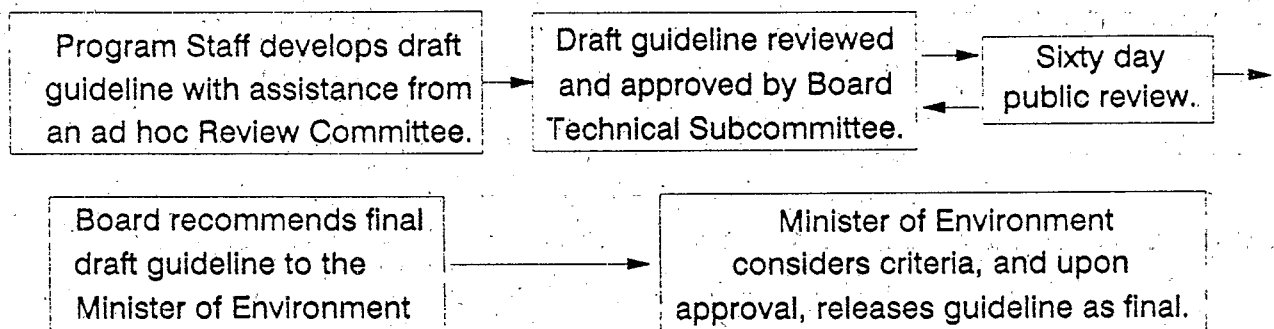
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Diagram of Canada's Environmental Choice Program

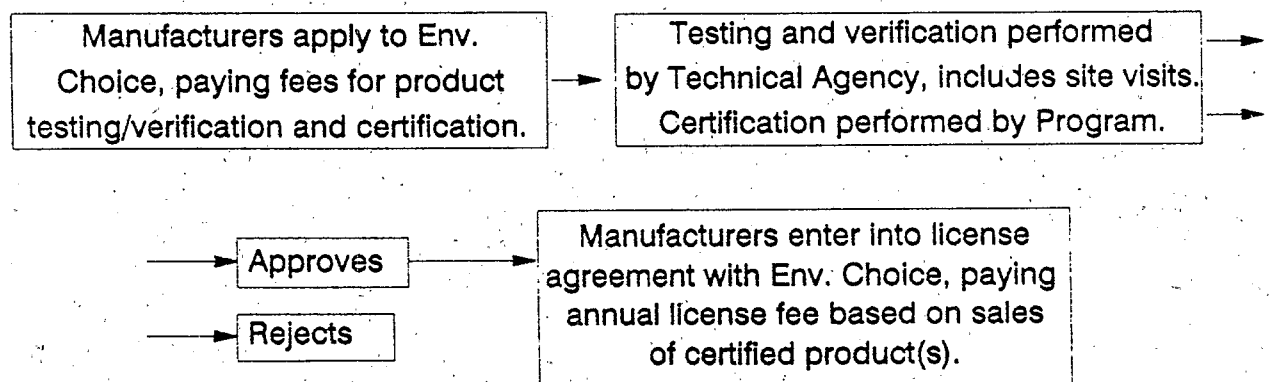
Stage I: Establishing Product Categories



Stage II: Developing Guideline Criteria



Stage III: Certifying Products and Services



JAPAN'S ECOMARK



JAPAN'S ECOMARK

Introduction

The EcoMark program was started in February 1989 to "recommend environmentally friendly products to consumers and contribute to environmental protection." The program is implemented by the Japan Environment Association (JEA), a non-governmental organization, under the guidance of the Environment Agency.¹⁵ Within the JEA there are two committees responsible for running the EcoMark program: the EcoMark Promotion Committee and the Expert Committee. The Promotion committee sets product criteria, allowing for input from interest groups. The Expert Committee is an expert panel that judges products and awards the use of the logo.

EcoMark has several goals:

- Heighten the environmental awareness of consumers,
- Recommend products which contribute to environmental protection and conservation,
- Symbolize an "ecological" lifestyle, and
- Promote "clean" innovation by industry. (Environmental Data Services, 1989)

EcoMark is the second oldest ecolabeling program after Blue Angel and by far the fastest acting program, having issued over 2,300 awards in 49 product categories as of the end of August 1992. The development of award criteria is faster than Blue Angel (Germany) and Environmental Choice (Canada) because products are judged using a rather different process. While other programs try to assess environmental impacts of products throughout their life-cycle and evaluate products within a product category, EcoMark often awards ecolabels to products that are inherently 'environmental,' not distinguishing so much the specific manufacturing processes of individual products within a category. In this way the logo is used to call attention to products that are part of "an ecological lifestyle," more than to weigh the relative impacts of general consumer products. The program is guided by "basic principles" that define EcoMark products as those that:

- incur a minimal environmental burden when used,
- improve the environment when used,¹⁶
- incur a minimal environmental burden when discarded after use, and
- contribute to environmental preservation in other ways. (Hashizume, 1992c)

¹⁵ The JEA is also described as "a public corporation under the guidance of the Environment Agency."

¹⁶ According to Mr. Hashizume of the Japan Environment Association, "improve the environment" means "the reduction of the pollution; e.g., a kitchen sink strainer which has fine mesh, can catch fine materials in the waste water from a kitchen and prevents water contamination of rivers and lakes. Most of household waste water [flows] directly to rivers and lakes in Japan."

At present, program criteria are set to promote specific activities or product attributes, based on these general guidelines. However, the JEA is studying approaches to using life cycle analysis, which would bring its evaluation approach closer to that of Blue Angel and Canada's Environmental Choice Program.

Two studies have been conducted to evaluate the influence of EcoMark. One was a survey of local governments, distributors and companies with EcoMark-approved products, conducted by the JEA in the Spring of 1991. More than half of the companies who had acquired the logo did so to improve their corporate image, citing also "requests from customers and increased sales." Almost all local governments were aware of the program, but only 40 percent of distributors. The other, a public opinion survey conducted by the Prime Minister's Office in July 1990, found that 22 percent of those polled were aware of the program. A report by JEA concludes, "Because of a low recognition factor and the small number of approved products, few consumers look for the EcoMark [logo] when they shop." (Hashizume, 1992c) EcoMark hopes to include some questions in another public opinion poll on environmental issues to be conducted by the Prime Minister's Office. (Hashizume, 1992b)

Administrative Structure

The EcoMark Secretariat is located within the Japan Environment Association, as are the two committees responsible for administering the program:

- "The *Promotion Committee* acts primarily in a supervisory capacity, approving the guidelines for the programme's operation, advising on day-to-day operations, and selecting appropriate product categories and criteria. It is a nine-member committee, with representatives from consumer, manufacturing, industry and distribution groups, the Environment Agency, the National Institute for Environmental Studies, and local governments."
- "The *Expert Committee* judges whether applicant products qualify for the label. This five-person committee is more technically-based, with consumer protection organization representatives, environmental science experts, as well as technical experts from the Environment Agency and the National Institute for Environmental Studies." (Salzman, 1991)

Members of the committees do not receive a salary. The government's Environment Agency acts only to "supervise" the JEA, to advise on both committees and give "guidance" for the nomination of committee members. Although start-up costs were paid by the government, the program is now self-financed from the fees assessed to licensees. It is the only government-related environmental certification program to be self-financed.

Award Process

EcoMark's award process is much simpler than any other seal-of-approval program. The result is that it is faster and less expensive to operate than more complex programs such as Blue Angel, but it has less public participation and the award criteria are less stringent. To qualify for an award, a product must meet the following guidelines:

- Preventative measures are taken against environmental pollution in the manufacturing stage;
- Processing is not difficult at disposal;
- Energy or resources can be conserved with use of the product;
- The product and manufacturer comply with laws, standards and regulations pertaining to quality and safety; and
- Price is not extraordinarily higher than comparable products. (JEA, 1991)

These criteria set minimum standards for selected evaluation criteria but should not be mistaken for a form of life-cycle analysis. It is not clear how products that have conflicting benefits and impacts as defined in these guidelines are evaluated.

Stage I

Product categories are selected by the Promotion Committee, but can also be proposed by industry and consumers. The Committee, following the basic principles listed above, based on information supplied by manufacturers, approves a product category for inclusion in the EcoMark program. Then, with the assistance of the Expert Committee, they establish award criteria for the product category.

Stage II

Once award criteria have been set, product applications are accepted. Manufacturers must supply relevant information to the Expert Committee, but the Committee may request further testing by a third party. Since products are judged on as few as a single criterion and not on a life-cycle analysis, occasionally whole categories of products are approved. For example, there is an award for composting containers, regardless of how they are made or what they are made of, because composting can mitigate solid waste disposal, an important concern in Japan. EcoMark has been considering approaches to LCA, and is currently considering using life cycle analysis as a "qualitative" rather than "quantitative" tool. The reasons given are: 1) there is no standardized method for LCA; 2) they have had difficulty getting correct data from manufacturers; and 3) results fluctuate widely according to the method of analysis and type of data. (Hashizume, 1992b)

Diagram of Japan's EcoMark Labeling Program

Stage I: Establishing Product Categories

Product categories are proposed by the Promotion Committee, industry and members of the public.

Promotion Committee, guided by basic principles, with information from Expert Committee and manufacturers sets categories.

Stage II: Setting Award Criteria

Criteria are set by the Promotion Committee in consultation with the Expert Committee.

Stage III: Award Process

Manufacturers apply for award to the Expert Committee, providing relevant information. The Committee may request additional third-party testing. There are no application or testing fees.

Approves

Rejects

Manufacturer signs two-year contract with Japan Environment Association, paying a licensing fee based on the retail price of the product.

If a product is given an award, a contract is signed with the JEA, and use of the logo is certified for two years. Unique among enviro-certification programs, the fee charged for use of the award (between 80,000 and 200,000 yen) is based on the retail price of the product, not the number of units sold or the market share. There is no application fee and no advertising fee, so it is often the least expensive program for manufacturers.

Public Review Process

According to the Japan Environment Association, "There is no public participation on the criteria setting process." The EcoMark office asks for feedback on proposed criteria from "several groups concerned with the product category." (Hashizume, 1992a) JEA did not identify the groups, but they are likely the same groups represented on the committees. EcoMark has been criticized since "...the programme provides for less public participation than in the Canadian programme, and the criteria are generally less complex than the German programme's." (Salzman, 1991)

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Additional Reading

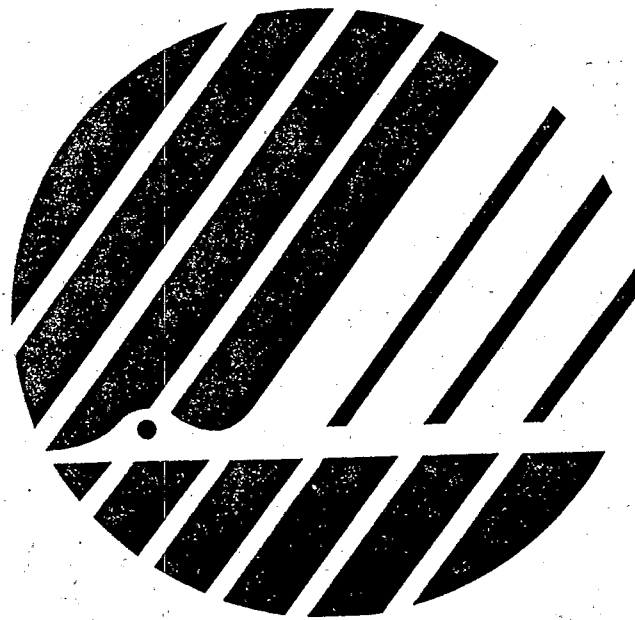
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THE NORDIC COUNCIL'S WHITE SWAN



THE NORDIC COUNCIL'S WHITE SWAN

Introduction

In 1989, the Nordic Council of Ministers introduced a voluntary, positive, and harmonized Nordic environmental certification program. The logo for the program is based on the emblem of the Nordic Council, and displays a white swan flying against a green background. The words "environmental label" appear above the logo in Swedish, Finnish, or Norwegian, and a short description of the relevant environmental attribute appears below. The first set of criteria, created for low mercury/cadmium button cell batteries, was approved in June 1991. As of April 1993, criteria for 14 product categories had been established, with another 23 under consideration. Over 200 products currently carry the White Swan logo. (UNCTAD, 1993; Nordic Council, 1993)

According to the Nordic Council's November 1991 position report, "[t]he Nordic environmental label is a neutral, independent label which guarantees a certain environmental standard. Only products which satisfy strict environmental requirements on the basis of objective assessments will be allowed to display the environmental label." The stated objectives of the program are 1) to provide consumers with guidance in choosing products least hazardous to the environment, 2) to encourage product development that takes into account environmental as well as economic and quality considerations, and 3) to deliberately use market forces to complement environmental legislation. (Nordic Council, 1993)

The Nordic program is noteworthy because of its novel administrative structure. While final decisions are made by a Coordinating Group, selection of product categories and establishment of award criteria take place at the national level. Currently, Norway, Sweden, Finland, and Iceland are participating in the program. Denmark is holding back, pending the EC's decision on the development of an EC ecolabel.

Structure

The Nordic Coordinating Group for Environmental Labelling acts under the authority of the Nordic Committee of Senior Officials for Consumer Affairs and oversees the White Swan program. The Coordinating Group makes the final decisions on the selection of product categories and award criteria. Each participating country has two representatives in the Group, and the chair rotates among the countries.

Product categories and award criteria are established at the national level (see descriptions of individual Nordic country programs below), although product categories are occasionally developed in joint efforts between two or more countries.

The program's agency in Norway is administered as a foundation, while the Finnish and Swedish agencies are incorporated into the their national standardization organizations. Because

of Iceland's recent entry into the White Swan program, there is currently very little information on its program. The four programs are highly harmonized to ensure smooth operation. Fees, structures, and processes are quite similar among the programs.

Award Process

The Nordic ecolabel award process can be broken down into roughly four steps. Usually only one of the participating countries works on the development of a White Swan product category, although occasionally two or more countries will work on one together. Throughout the process, the individual agencies cooperate closely with the Nordic Coordinating Group.

Stage I: Choosing Product Categories

Proposals for new product categories are handled by the program agency in each country. "Letters of interest" from manufacturers and importers are included as input by the program in the decision making process. Once a proposal has been made, the country from which the proposal originated consults with the other Nordic countries to avoid duplication of effort. The selection of a new category must then be sanctioned by the Nordic Coordinating Group, which also decides which country will be responsible for preparing a proposal. According to the Nordic Council, priority is given to proposed product categories which will affect significant environmental problems.

Stage II: Setting standards

The country assigned the project then performs a background study and drafts a set of award requirements. The requirements are defined by assessing the cradle-to-grave life cycle of items in the product category, including "factors such as consumption of natural resources and energy, emissions into air, water, and soil, and generation of waste." (Nordic Council, 1991) The Nordic Council sets up working groups composed of "qualified experts," who "target and determine the most important environmental impacts" of the product group in question. (Norwegian Foundation for Environmental Product Labelling, 1992) In order to stimulate progress in the development of environmentally sound products, the Nordic Council states that the "criteria will be set as high as possible...and at least higher than the most stringent national requirements." These criteria include requirements for testing procedures and data reporting. Criteria are developed with internationally standardized test methods in mind, in order to maximize test compatibility between White Swan and other programs.

After product requirements have been drafted, the country sends the proposal to the other participating countries for comment. The original country then revises the proposal on the basis of those comments and sends it to the Coordinating Group.

Stage III: Coordinating Group Decision

The Coordinating Group may accept, reject, or modify the proposal. All Group decisions must be unanimous. If a decision cannot be reached, the issue may be referred to the Council

Diagram of the Nordic Council's White Swan Labeling Program

Stage I: Product Categories

Product categories are proposed in each country by manufacturers and importers (Norway), the public (Sweden) or the Board.

In consultation with the other countries, the Board chooses categories to pursue and assigns expert groups to establish draft criteria.

Stage II: Setting Award Criteria

Draft criteria are sent to the other countries for comments. The Board of the originating country then makes any changes.

Draft criteria are sent to the Nordic Council Coordinating Group. The Coordinating Group accepts, rejects or modifies the proposal.

Once approved, the criteria are valid in all countries.

Stage III: Award Process

Manufacturers in Nordic Council countries apply for the award to the program in their own country. Importers apply to the program in the country that composed the criteria for that product category.

Approves

Rejects

Manufacturer signs three-year contract with the program that awarded the label, paying a licensing fee based on product sales. The award is valid in all Nordic Council countries.

In some countries, an applicant must submit data with the application. All countries have a processing fee.

of Ministers at the request of a country.

Once approved by the Coordinating Group, a product category and its criteria are valid in all of the Nordic Council countries.

Stage IV: Awarding ecolabels

A manufacturer from within a Nordic Council country seeking a product certification may send an application to the program agency in his/her own country. A foreign manufacturer seeking an award applies to the country that developed the product category. The individual countries manage the application and approval processes for specific products. Once an award has been made to a product by one country, it may display the White Swan logo in any of the other participating countries.

Criteria for a product category remain valid for three years. After this period, the criteria may be "changed, rescinded, or renewed for one year at a time." (Nordic Council, 1991)

Process in Norway

In Norway, the White Swan program is administered by an independent foundation set up by the Ministry of Family and Consumer Affairs in 1989. The foundation consists of a Board, a Council, and a Secretariat.

- The Board is responsible for actual operation of the program and makes final decisions (at the national level) on product categories and criteria. The Board's eight members are drawn from government (4 members), an environmental group (1), a trade union (1), and from the federation of commercial associations (1). Once the Board has decided to pursue a product category, it appoints a broadly based expert group to define the award criteria.
- The Council is responsible for overall management of the program, including budgets, setting up activity guidelines, and handling complaints. The Council consists of 19 members, drawn from government (8 members), trade and industry groups (5), and 6 more from environmental organizations, trade unions, youth organizations, and the housewives' association.
- The Secretariat is responsible for day-to-day administrative activities.

In Norway, manufacturers and importers may propose new categories, along with supporting data. If the Board feels that a new category is worth pursuing, it will appoint an expert group to establish criteria for the category. It should be noted that the foundation receives no technical support from the government, aside from the expertise of sitting Board and Council members. All draft criteria are sent out for review on a broad basis in Norway, Finland, and Sweden. After the criteria has been commented on by reviewers and the other

national programs, the proposal is submitted to the Board for approval. If approved by the Board, the proposal is sent to the Nordic Council Coordinating Group for final approval.

The Board (through the Secretariat) also evaluates individual applications for certification. Testing fees are paid by the applicant. There is a certification fee of NOK 10,000 (about US \$1550) and an annual sales fee equivalent to 0.4 percent of annual turnover, with a minimum of NOK 1000 and a maximum of NOK 250,000.

Process in Sweden

The White Swan program is administered in Sweden by the Swedish Standards Institution (SIS), a government agency. The SIS was chosen to run the program because of 1) its reputation for objectivity, 2) its experience in establishing criteria, 3) economic efficiency, and 4) the fact that the SIS had already started to work with other programs, thus easing future harmonization.

The ecolabeling program consists of an Environmental Labeling Board, a Reference Group, and a Secretariat.

- The Environmental Labeling Board is responsible for initial selection of product categories, final approval of categories and criteria (before Coordinating Group), and establishment of regulations and fees. The broadly-based Board has ten voting members, drawn from industry, retailers, trade groups, consumers groups, and environmental groups. Decisions are by majority rule.
- The Reference Group advises the Board and meets twice a year. The members of the Labeling Board are also members of the Reference Group, which includes representatives from a large number of consumer, health, environmental, industry groups.
- The Secretariat oversees individual license applications.

In Sweden, any group or individual may propose a product category. The Board decides which categories are worth pursuing, and assembles an expert group to precisely define the product category, establish award criteria, and the appropriate compliance tests. Like many other environmental certification programs, the group examines a cradle-to-grave inventory of the environmental impacts of a product, but selects only the most serious impacts when considering award criteria. After the award criteria has been commented on by the other national programs, the proposal is submitted to the Board for approval. If approved by the Board, the proposal is sent to the Nordic Council Coordinating Group for final approval.

The SIS Secretariat handles the individual license applications. The applicant must have test data that proves compliance to the criteria, and must also show that the production process complies with government standards. An application fee of SEK 11,000 (around US \$1850) is paid when the application is entered. The applicant must also pay for testing, certification, and a licensing fee dependent on product sales. The program plans to be self-financing within five years of the start date. Sweden funds its program through a loan.

Process in Finland

The Program is administered in Finland by an independent organization, managed by the Finnish Standards Association, or SFS. It began operation in 1990.

The Finnish White Swan Agency consists of an Environmental Labeling Board, a Reference Group, and a Secretariat.

- The Environmental Labelling Board is responsible for initial selection of product categories, final approval of categories and criteria (before submission to Nordic Council Coordinating Group), and establishment of regulations and fees. The Finnish Board is similar to those of the other member programs, and has eight voting members, drawn from consumer, trade, industry, and environmental groups. Decisions are by majority rule.
- The Consultative Reference Group is a 19-member group that advises the Board. The Consultative Group includes representatives from Government (4 people), trade and industry (6), consumer and environmental organizations (7), and research institutes (2).
- The Secretariat is staffed by a department of SFS, and processes individual license applications.

The Finnish award process and fees are very similar to those of the other two programs.

Iceland

As Iceland has only recently started their program, there are very few details available about it.

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GREEN SEAL



GREEN SEAL

Introduction

Green Seal is an independent, non-profit organization "devoted to environmental standard setting, product labeling and public education" in the United States. It was established in 1989 and is currently chaired by Denis Hayes, director of Earth Day. According to the Green Seal organization, the program "helps identify environmentally preferable products in order to encourage and enable consumers to purchase such products and reduce their impacts on the Earth." The program in turn gives manufacturers an incentive to improve the environmental attributes of their products.

To date, six standards have been finalized, with a number more in various stages of development.¹⁷ In February 1993, Green Seal announced the release of the first five Green Seal Certifications, which will appear on bathroom and facial tissue products distributed by Ashdun Industries. In May 1993, a Canadian-made water-efficient toilet was certified.

Since the Green Seal logo has only recently appeared on products, the effectiveness of the program cannot yet be assessed. In preliminary market research commissioned by Green Seal, four out of five consumers said they would choose a product with the Green Seal logo over a product without it, quality and price being equal.

Administrative Structure

Green Seal employs 14 full-time staff members in Washington, D.C., in four departments: standards setting, product certification, corporate development, and marketing and administration. A board of directors, composed of business people, public figures and leaders of environmental, consumer and public interest groups, decide overall direction for the organization.

Green Seal has a standing contract with Underwriter Laboratories (UL) to be its primary testing and factory inspection facility. UL, founded in 1898, has an excellent reputation in the area of setting standards for product safety. UL has 3,800 employees who conducted more than 74,000 product evaluations in 1990. They have more than 500 field representatives inspecting factories in 74 countries. (Green Seal, 1991)

An Environmental Standards Council, composed of independent scientists, academicians, and other experts, acts as an appeals board for manufacturers and others who disagree with Green Seal's technical judgements. In some cases, advisory panels composed of representatives

¹⁷ Standards are formulated to cover multiple, related product categories, such as faucet aerators and showerheads. The six standards finalized cover a total of 35 product categories.

from businesses, government, academia, and the public interest community may be formed to assist in the development of specific standards.

Award Process

Stage I: Selecting Product Categories

Green Seal accepts proposals for product categories from industry and the public, but makes the final selection of new product categories for the program.

Stage II: Setting Standards

At the initiation of the program in 1990, Green Seal announced that it would conduct Life Cycle Assessments (LCA) for the product categories it planned to test. However, this approach is very expensive (estimates range up to hundreds of thousands of dollars for each product category), and lacks a consensus opinion for correct procedures. (Holmes, 1991) Green Seal has instead decided to use an "Environmental Impact Evaluation" (EIE) for each product. An EIE is a shortened version of a life cycle assessment designed to highlight the most important environmental impacts of a product's lifecycle. Standards are then set for the most important points in the extraction, manufacturing, distribution, use and disposal stages of a product's life.

To set a standard for a product category, Green Seal conducts an EIE, and presents a proposed standard for public review. The standards address one or more of the following issues: toxic chemical pollution, energy consumption, impacts on water resources, impact on wildlife, natural resource consumption, impacts on the atmosphere, and global warming. Green Seal enlists UL's assistance in designing standards, and in some cases will set up informal advisory panels to advise on the development of specific standards. An independent Environmental Standards Council, made up of scientists and other experts, hears appeals from anyone who disagrees with Green Seal's decisions.

Proposed standards are sent for comment to relevant parties, such as manufacturers, trade associations, environmental and consumer groups, and government officials, as well as to any member of the public who requests them. The standard for compact fluorescent light bulbs, for example, was sent to approximately 1,000 reviewers. After receiving comments on the proposal, Green Seal revises the standards as necessary to reflect public comment. As of January 1993, standards had been finalized for compact fluorescent light bulbs, rerefin motor oil, tissue paper, paper towels and napkins, printing and writing paper, and water efficient fixtures. Standards for household cleaners, windows, household appliances, and paint are currently undergoing public review, with a number of other categories soon to follow. (Mager, 1992)

The products for which standards are set must meet or exceed any applicable safety and performance standards, as well as all applicable environmental regulatory requirements. Green

Seal plans to revise standards every three years to keep up with technological advances in product fields and encourage continual environmental improvement.

Stage III: Evaluating Products

Underwriter Laboratories is "the primary testing and factory inspection contractor" for Green Seal. They (or, on occasion, another certified testing laboratory) will perform the necessary tests and inspections to decide whether or not a manufacturer's product meets Green Seal's standards. Information on manufacturing will be provided by companies who apply for ecolabels, and proprietary information will be kept confidential. The manufacturer pays a testing fee to cover costs incurred by Green Seal and UL.

Stage IV: Awarding the Seal

If a product passes all of the required tests and fully meets the standard, Green Seal will award it the use of the logo. The logo may be used on the product itself and for product-specific advertising. It may not be used for general corporate advertising. If a product is awarded, the manufacturer must also pay an annual monitoring fee, in addition to the initial testing fee.

Enforcement of the Use of the Logo

Green Seal retains ownership of the logo even after it is applied to a product. Contracts for the use of the logo contain rules covering its proper use. For example, it can be used only on a product or in product-specific advertising. "Green Seal will actively monitor the use of the seal... and take any necessary legal action to stop unauthorized use of its mark." (Green Seal, 1991) Also, Green Seal requires that manufacturers be monitored periodically to ensure continued compliance with the standards. Green Seal may perform follow-up testing and monitoring, which may include unannounced inspections.

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SWEDEN'S GOOD
ENVIRONMENTAL CHOICE



SWEDEN'S GOOD ENVIRONMENTAL CHOICE

In addition to the Nordic Council's White Swan Program, a private environmental certification program called "Good Environmental Choice" (Bra Miljøval) has been active in Sweden since 1990. Administered by the Swedish Society for the Conservation of Nature, Sweden's largest environmental organization, the Good Environmental Choice evolved into a product and shelf labeling program from what was originally a guide to environmentally sound shopping published by the Society in 1988. In 1989, the Swedish Cooperative Federation (KF), one of Sweden's largest retailers, initiated a shelf labeling program that encouraged the purchase of goods recommended by the Society's guide. By the end of 1989, the two other largest Swedish retailers, ICA and Dagab, joined with KF in sponsoring an ecolabeling scheme that became the Good Environmental Choice Program.

Like many other ECPs, Good Environmental Choice selects product categories and qualifying criteria. After analyzing a resource impact matrix for a particular product category, the most important aspect (e.g., bleaching for paper products) is identified as the basis of the criteria.

Good Environmental Choice seems to have been very successful by some measures. According to a report by the Organization for Economic Cooperation and Development (OECD), the retail stores at which over 80 percent of all Swedes shop "have environmentally labeled goods in the paper products, laundry detergent, and battery categories." (Salzman, 1991) Despite this success, the current status of the program is somewhat unclear. While a study by the U.N. Commission on Trade and Development (UNCTAD) reports that the Good Environmental Choice program was initiated by retailers to provide a more "dynamic" alternative to the White Swan (which they feel is overly influenced by industry interests), the OECD report states that the Good Environmental Choice program planned to cease issuing labels once the White Swan became fully operational. (Salzman, 1991; UNCTAD, 1993)

Structure

The *Good Environmental Choice Board* selects the product categories. The Board is composed of representatives of the Society for the Conservation of Nature, as well as one representative from each of the sponsoring retailers.

The *Society for the Conservation of Nature* develops criteria for each product category. In this process, the Society may consult universities, public authorities, and occasionally private businesses.

Process

- I. The Good Environmental Choice Board select the product categories.

- II. The Society for the Conservation of Nature develops the product category criteria in consultation with other organizations.
- III. Applicant manufacturers must declare the composition of their products to the Society. Products that meet the criteria may be displayed on special shelves showing the Good Environmental Choice logo. As costs are borne by the Society and the participating retailers, manufacturers are not required to pay a fee to have their products displayed on the Good Environmental Choice shelves. If a manufacturer wishes to have a product ecolabel, however, license fees of SKOR 5000 (about US\$600) are assessed for the first product under license and SKOR 1500 for each additional license. (UNCTAD, 1993)

Product Categories

As of mid-1993, the Good Environmental Choice program had developed criteria for the following 12 product categories:

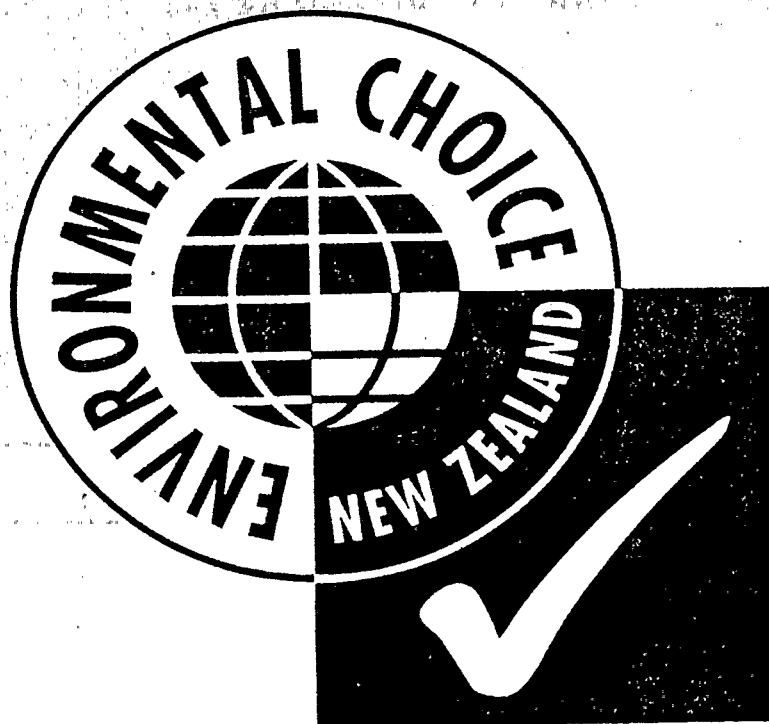
- All purpose cleaners
- Heavy duty cleaners
- Toilet cleaners
- Detergents for white cloths
- Detergents for colored cloths
- Stain removers
- Hand detergents for dishes
- Machine detergents for dishes
- Shampoos
- Batteries
- Diapers
- Paper and paper products

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ENVIRONMENTAL CHOICE NEW ZEALAND



ENVIRONMENTAL CHOICE NEW ZEALAND

New Zealand officially started its Environmental Choice New Zealand program on July 10, 1990. The program is a voluntary seal-of-approval program, much like Canada's Environmental Choice Program or Germany's Blue Angel. The stated objectives of the program are: provide an incentive for manufacturers and importers to reduce the environmental impacts of products sold in New Zealand; to recognize the genuine moves by companies to reduce the adverse environmental impacts of their products; to provide a clear, credible and independent guide to consumers wishing to take account of environmental factors in their purchase decisions; to encourage consumers to purchase goods that have lower environmental impacts; and ultimately to improve the quality of the environment and to encourage the sustainable management of resources. (Minister for the Environment, 1992)

In March of 1992, the Environment Minister announced the release of the first three product categories: products made from recycled plastic, carbon zinc batteries, and zinc air batteries. He also stated Environmental Choice's intention to work closely with the Australian Environment Ministry to harmonize the two countries' ecolabeling programs. (Minister for the Environment, 1992) Since then, product category specifications have been published for refined lubricating oil, laundry detergents, machine dishwashing detergents, hand dishwashing detergents, lead acid batteries, and paints.

In setting up Environmental Choice New Zealand, the government wanted to ensure that the program be credible, practical, independent and nonpartisan, and comparable to other programs such as Environmental Choice Australia and Canada's Environmental Choice Program. To harmonize and coordinate with Environmental Choice Australia and other programs, the program intends to consider closely the award criteria and methodology of other national programs during its own program development.

Structure

Environmental Choice New Zealand is administered by *Telarc*, the New Zealand Accreditation Authority for Quality Assurance, Laboratory Testing, and Industrial Design. While *Telarc* is a statutory body and includes government appointees, it operates independently and is self-financing.

A working group from *Telarc* has established the *Environmental Choice Management Advisory Committee* (ECMAC) to provide advice to the *Telarc* Council. ECMAC is a ten member, broadly-based committee, with representatives from manufacturing, retailing, packaging, and environmental groups. ECMAC also includes representatives from the Ministry for the Environment and Consumers Institute.

Award Process

According to Environmental Choice New Zealand, "a product may be certified because it is made in a way that improves energy efficiency, reduces hazardous by-products, uses recycled materials, or because the product itself can be reused or is otherwise environmentally preferable." (Minister for the Environment, 1992).

Stage I: Choosing a Product Category

ECMAC is responsible for choosing suitable product categories for Environmental Choice New Zealand. Once ECMAC has decided upon a product category, it sets up a Task Group to develop a specification for the category.

Stage II: Developing the Specification

The Task Group set up by ECMAC is responsible for developing an appropriate Specification for the product category. According to Environmental Choice New Zealand, the requirements in the Specification "are based on information available at the time and are upgraded as new information and technology make more stringent requirements possible." Products are expected to meet all applicable governmental safety and performance regulations, as well as perform as effectively as is "generally expected of products in their category."

After the Task Group has completed a draft of the Specification, ECMAC releases the document for public comment. The public comment period lasts for at least 30 working days. The Task Group then takes these comments and revises the Specification, after which the document is referred to ECMAC. ECMAC, in turn, recommends the requirements to the Telarc Council.

Stage III: Telarc Decision on Specification Requirements

The Telarc Council then decides whether to approve the specification for publication.

Stage IV: Awarding the Environmental Choice New Zealand Mark

Product suppliers, which may include manufacturers, importers, wholesalers, and retailers, may apply for certification as soon as product category specification has been published.

Telarc may require product testing performed by a Telarc-registered laboratory, and/or examination of the relevant manufacturing records to verify that a product meets the product category specification.

If Telarc is satisfied that a particular product complies with the requirements, the applicant is granted a license to use the program's logo, the Certification Mark. Applicants pay an application fee, and if a product is accepted, an annual licensing fee as well. Licensing fees are calculated on a sliding scale depending on the sales volume for that product.

Licenses are valid for at least two years, subject to the payment of fees and continued compliance, which is monitored by Telarc throughout the period. Telarc will give licensees 12 months notice before revising product category specifications.

As of April 1993 only one application has been received, and that applicant has been licensed to use the certification Mark for paint.

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INDIA'S ECOMARK PROGRAM

INDIA'S ECOMARK PROGRAM

Introduction

A resolution passed by the Indian Parliament on February 20, 1991, instituted a voluntary "Scheme on Labelling of Environment Friendly Products." (Ministry of Environment and Forests, 1991) Like Japan's program, the Indian program is called the Ecomark, although its administrative structure is closer to Canada's Environmental Choice Program, with government taking a dominant role.

The program "provides accreditation" to household and consumer products that meet specified environmental criteria, along with quality requirements of the Bureau of Indian Standards. The objectives of the program are 1) to provide an incentive for manufacturers and importers to reduce adverse environmental impacts of products, 2) to assist consumers to become environmentally responsible in their daily lives and to encourage them to consider environmental factors in their purchase decisions, and, 3) ultimately, to improve the quality of the environment.

As of May 1993, 16 product categories had been or were being developed, although "response of the industrial sector [was] slow." Applications had been made for only two product categories, soaps and detergents. (UNCTAD, 1993)

Administrative Structure

The program is administered by three bodies. The first, a *Steering Committee*, has been set up in the Ministry of Environment and Forests, and will be composed of 12 representatives of different government offices and "not more than five" representatives of "industry, consumer groups or other non-governmental organisations." This committee is responsible for determining product categories, promotion and general oversight and development of the program.

A *Technical Committee* determines the criteria for awarding the Ecomark logo, and is composed primarily of representatives of government research and standards setting offices. Like the Steering Committee, "not more than five non-officials" join the seven government employees. The Technical Committee is based in the Central Pollution Control Board in New Delhi.

The third body is the *Bureau of Indian Standards* (BIS). The BIS assesses and certifies products according to criteria set by the Technical Committee. It also handles the licensing of the logo, enforcement of rules, and collection of fees.

Award Process

In the resolution, the Government of India left most of the details of the program's operations up to the committees to formulate. They did specify that a licensing fee would be charged for each period of use, that the certification testing should take less than three months and that it would be performed by the BIS. In the formulation of product criteria, there is a

public review period, in addition to Technical Committee considerations. The Technical Committee must consider the "main environmental impacts" of a product, including:

- potential for pollution in production, use, and disposal;
- recyclability, recycled content, and biodegradability;
- decreased use of non-renewable resources, including non-renewable energy sources; and
- decreased impact in the area of greatest environmental impact for that product category.

Although the resolution makes no mention of life cycle analysis per se, it does list most parts of a product's life cycle in a list of considerations for "determining the primary criteria for a product." The list includes sources of raw materials, energy used and materials wasted in the production stage, use of recycled, recyclable and biodegradable material, and impacts of product and packaging disposal. (Ministry of Environment and Forests, 1991) In practice, product standards are based on "only a few criteria [that] were found to be most important," especially those relating to "energy and resource saving production processes." (UNCTAD, 1993)

Fees are charged by the BIS for testing and for licensing of awards, if granted. Although the licensing fee "is not very high," testing can cost up to \$1,700 depending on the complexity of the tests. (UNCTAD, 1993) "This figure is quite high for a small scale enterprise," but no mention is made in the resolution to adjust the fees for small businesses.

Public Review

Like Canada's Environmental Choice Program, the Ecomark program allows for a 60-day public review period of draft criteria for product categories. The criteria are published in the Gazette of India, an official government publication. "So far, the response to the gazette notification of the criteria has been very low." (UNCTAD, 1993)

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KOREA'S ECO-MARK SYSTEM

KOREA'S ECO-MARK SYSTEM

The Korean Ministry of the Environment launched its Eco-Mark environmental certification program on June 1, 1992, announcing four recycled-content products at that time, with eight other products being added in November. At the time of this writing, 96 products within those 12 categories have been awarded the Eco-Mark. The Korean Academy of Industrial Technology (KAITECH) assisted in the development of the program, providing technical assistance for the development of draft criteria "more than 50" product categories.

The Korean Eco-Mark's approach to product certification is based on defining the single most important criterion for each product category. The Eco-Mark has found that the large data requirements for the life cycle approach are difficult to meet in practice. (UNCTAD, 1993)

Structure

The Korean Eco-Mark system is administered by the *Ministry of the Environment*. New product category suggestions are directed to the Technology Development Division of the Ministry. The "EPA" acts as a secretariat for the program. The EPA is made up of representatives from industry and business, consumer organizations, environmental organizations, quality testing authorities and experts. (UNCTAD, 1993) The EPA conducts public hearings on the draft criteria, accepts public comments, and revises the criteria based on the received comments.

The *Eco-Mark Committee* makes the final selection of product categories, and prepares the draft criteria for the selected product category. After the EPA has made revisions to the criteria based on public comment (see below), the Eco-Mark Committee makes the final decision on the criteria. The 13-15 member committee is comprised of representatives from consumer organizations, industry representatives, environmental preservation organizations, inspection units, scientists, legal experts, and public health experts.

An *Eco-Mark Assessment Committee* (EAC) is set up by the EPA for each applicant to review the applicant's product.

Award Process

Stage I: Development of Product Categories

1. Suggestions for potential product categories are directed to the Technology Development Division of the Ministry of the Environment. New categories may be suggested by government, manufacturers, business, or the general public.
2. With assistance from organizations such as the Korean Institute of Science and Technology (KIST) and the Korean Institute of Advanced Science and Technology

(KIAST), the Ministry prepares an advisory document, and submits it to the Eco-Mark Committee.

3. The Eco-Mark Committee makes the final selection on the product category and prepares draft criteria for that product category. These draft criteria are presented to the EPA.
4. The EPA conducts a public hearing on the criteria, publishes the proceedings and receives comments. The EPA then modifies the criteria based on these comments.
5. The EPA submits the amended criteria to the Eco-Mark Committee. The Committee makes the final decision on the criteria for the product category.
6. The EPA publishes the final criteria in the Eco-Mark Newsletter. The Ministry communicates the final criteria to the general press.

Phase II: Evaluating Applicant Products and Awarding the Eco-Mark

1. The applicant manufacturer submits its product for evaluation to the EPA.
2. The EPA assembles an Eco-Mark Assessment Committee (EAC), which reviews the application. The EAC is comprised of 6 experts from various testing agencies.
3. The EAC assesses whether the applicant product meets the criteria. The EAC reports its decision to the EPA.
4. If the product qualifies for the Eco-Mark, the EPA draws up a two-year contract with the manufacturer.
5. Depending on the sales of the product, the manufacturer pays a fee ranging from 300,000 won to 1,000,000 (approx. US\$400 to US\$1250).

Product Categories

As of May 1993, the Korean Eco-Mark has finalized 12 product categories (see table below).

Korean Eco-Mark Product Categories	
Product Category	Criteria
1. Products made with reused paper.	Should contain > 50% reused paper.
2. Tissues made with reused paper.	Should contain > 50% reused paper.
3. Reused plastics	Should contain > 60% waste plastics.
4. Aerosol sprays without CFCs.	Should contain 0% CFCs
5. Reusable diapers.	Should contain 100% cotton.
6. Non-asbestos brake lining.	Should contain 0% asbestos.
7. Aluminum cans with stoppers.	Should use aluminum.
8. Filter for kitchen sinks.	Should have small holes \leq 1.5mm diameter.
9. Non bleached and un-dyed towels.	Should be made without dyes or bleach.
10. Water valves.	Water should not run after valve is closed.
11. Packaging materials using wastes.	Should be made with 100% wastes.
12. Soap made with waste edible oil.	Should be made with > 50% waste edible oil.
Source: UNCTAD, 1993.	

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**SINGAPORE'S
GREEN LABELLING SCHEME**



SINGAPORE'S GREEN LABELLING SCHEME

Introduction

Singapore launched its voluntary and positive Green Labelling Scheme in May 1992 to "promote green consumerism" among Singapore's citizens. The GreenLabel Logo takes the form of a green leaf surrounded by the words "GreenLabel SINGAPORE." The first set of criteria, released in August 1992, included stationary paper, hygiene paper, printing paper, office automation paper, and carbon zinc batteries. Draft criteria for alkaline batteries and compact fluorescent lamps were released for public feedback in February 1993. As of March 1993, the Green Labelling Scheme received 81 applications from 49 companies for the first 5 product categories. In a recent survey of 18 companies which manufacture products carrying the GreenLabel, 7 report increases in sales. (Loo Hak Jan, 1993)

According to the Ministry of the Environment, the GreenLabel is designed to raise consumer awareness of the environment and of products that exert a comparatively smaller demand on the environment. In addition, the GreenLabel is designed to provide an incentive for manufacturers to account for the environmental impact of their products. (Ministry, 1992)

The Green Labelling Scheme is a criteria-based program which uses a simplified Life Cycle Analysis. Instead of examining every impact that a product exerts on the environment from cradle to grave, the Singapore scheme isolates and studies the "few most important parameters" for each product category to determine which products qualify for the GreenLabel. For example, carbon-zinc batteries are approved by the program based solely on their mercury content (no more than 10 ppm Hg).

Structure

The Green Labelling Scheme is administered by the *Secretariat*, which is provided by the Waste Minimisation Department of the Ministry of the Environment. The Secretariat is responsible for receiving and processing applications for the GreenLabel, collecting fees, responding to inquiries from the public and applicants, producing newsletters on the Green Labelling Scheme and providing information to the media. (Ministry, 1992)

An *Advisory Committee* has been set up to assist the Secretariat in the formulation of the qualifying criteria, which requires "expert knowledge on the manufacture, distribution, usage, and disposal of products." (Ministry, 1992) The broad base Advisory Committee consists of representatives from industry, retailing, academia, statutory organizations, and environmental groups. Participants include the Singapore Institute of Standards and Industrial Research, Trade Development Board, National University of Singapore, Nanyang Technological University, Consumer Association of Singapore, Singapore Manufacturers Association, Singapore Retailers Association, and the Ministry of the Environment.

Award Process

Products that meet the criteria for the appropriate product categories are allowed to carry the GreenLabel. Foreign and domestic companies may participate in the program in the same way.

Stage I: Choosing a Product Category

The Secretariat identifies and defines potential product categories, which may be suggested by the public. The Secretariat legally chooses product categories which cover "mass consumer items." (Loo Hak Jan, 1993)

Stage II: Developing Draft Criteria

Once a product category has been defined, the Secretariat organizes a workgroup to produce a draft qualifying criteria document. The workgroup is comprised of experts from the Ministry of the Environment and various academic institutions.

The criteria are then provided to the Advisory Committee for discussion. The Committee organizes technical meetings with industry experts to discuss the validity and suitability of the draft criteria.

Stage III: Soliciting Public Feedback

The revised draft criteria are then released to the public for comment. The public comment period is usually 30 days, during which time interested parties are invited to submit written comments to the Secretariat. The Secretariat collects the comments and forwards them to the Advisory Committee.

Stage IV: Finalizing Qualifying Criteria

After considering the comments received from the public, the Advisory Committee either revises the criteria or approves the original draft. The finalized criteria are then sent to the Approving Board for final approval, after which the qualifying criteria are published. The Approving Board is headed by the Permanent Secretary of the Environment.

Stage V: Awarding the GreenLabel

After the qualifying criteria have been finalized, companies with products that fall under the product category specification may apply for the GreenLabel. Applicants obtain application kits which lay out the terms and conditions for approval and the use of the GreenLabel. During the verification process, the Secretariat may require access to quality control and production records. Samples of the candidate products must be tested by accredited laboratories to see whether or not the qualifying criteria are met. With products where criteria testing in the lab

is difficult (e.g. recycled paper content in a paper product), a "declaration from the Chief Executive Officer or equivalent is required instead." (Loo Hak Jan, 1993)

An approved product is granted a license to carry the GreenLabel logo for three years. From time to time, the Secretariat may opt to review and revise qualifying criteria to keep up to date with the latest technological developments.

If a manufacturer applies for certification for a product within a year of the date of the release of the Final Qualifying Criteria, he/she does not pay any fee for the first five years. After that time, an Annual License Fee is required. If a manufacturer applies after a year of the date of the release of the Criteria, then an application fee of \$20.00 is required. The manufacturer is still exempt from the License Fee for three years, after which it must be paid every year.

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THE EUROPEAN COMMUNITY'S ECOLABEL



EUROPEAN COMMUNITY

Introduction

On March 23, 1992, the Council of Ministers of the European Community adopted a regulation for an EC "eco-label award scheme." The program is intended to "promote the design, production, marketing and use of products which have a reduced environmental impact during their entire life cycle, and provide consumers with better information on the environmental impact of products." (European Community, the Council, 1991) The program will be effective in all twelve EC member states, and individual states will be largely responsible for the process of evaluating products and making awards.¹⁸

The program stresses that the quality of products awarded cannot suffer as a result of their reduced environmental impact, and that an assessment of products must be based on a complete scientific evaluation of product categories from "cradle to grave." The Commission of the European Communities has been given the objective of launching the Community Ecolabel Award Scheme in June of 1993.

Administrative Structure

Many parties are involved in setting evaluation criteria and in awarding ecolabels:

- The *EC Commission* is composed of 17 representatives: one per country with two each from the four largest countries, and one president. The Commission is the center of activity for the program, facilitating the process, and seeking guidance from and consensus among all the other parties. The Commission decides what product categories to consider.
- The *Consultation Forum* is composed of the principal interest groups, including Community-level representatives of industry, commerce, consumer organizations, and environmental organizations. (The two former groups may include trade union representatives as well.) The Commission consults the Forum members before submitting the draft criteria to the Regulatory Committee of Member States for final approval. In addition, interest groups are consulted in the earlier stages of preparing proposals.
- *Competent Bodies* are set up within each Member State of the EC. Competent Bodies accept proposals for product categories, which they review and pass along to the Commission. The Commission then assigns specific product categories to "lead countries"; Competent Bodies in each lead country investigate that category with life cycle analysis. From this analysis, they develop draft criteria for product standards.

¹⁸ EC member states are Belgium, Germany, France, Italy, Luxembourg, The Netherlands, Denmark, Ireland, United Kingdom, Greece, Spain, and Portugal.

Once the criteria have been considered by the Consultation Forum voted on by the Regulatory Committee, and adopted by the Commission, Competent Bodies can accept applications from manufacturers, collect testing fees and conduct tests as necessary on products. Awards given to products must be approved by all Competent Bodies, via the Commission. Competent Bodies then sign a standard contract with manufacturers, assess licensing fees and monitor the proper use of the ecolabels.

- The *Regulatory Committee of Member States* is chaired by a non-voting representative of the Commission. The Committee has final approval of criteria for product categories and settled any reasoned objections made by Competent Bodies to a manufacturer's application for the award.
- The *Council of Ministers* is the primary legislative body of the European Community. For the eco-labeling program, the Council only acts to decide on proposed criteria or awards rejected by the Regulatory Committee.

Award process

The EC ecolabel program can be arranged into three stages, as illustrated in the flow chart diagram.

Stage I: Defining Product Categories

Any interested party, any Member State or the EC Commission itself can propose a product category. The EC Commission must then approve of categories to be investigated by member states. A "lead country" is assigned to perform a life cycle analysis and set guidelines for that product category, with the subsequent approval required of other EC members before it becomes a community-wide standard.¹⁹

The EC has formulated an "indicative assessment matrix" to evaluate products and to set criteria for product categories. This matrix, presented below, indicates the five stages in a life cycle, and the potential environmental impacts in those stages. (European Communities, the Council, 1992)

Stage II: Setting criteria

After the Competent Body analyzes the product category, it submits draft criteria to the Commission, which consults with the Forum and passes the criteria to the Committee of Member States for consideration. If approved by the Committee of Member States, the guidelines

¹⁹ One motivation for the requirement of approval of other EC members is to overcome the fear of national favoritism in awarding ecolabels to products from that country.

Indicative Assessment Matrix					
Environmental Fields	Product Life Cycle:				
	Pre-production	Production	Distribution (including packaging)	Utilization	Disposal
Waste Relevance					
Soil Pollution and Degradation					
Water Contamination					
Air Contamination					
Noise					
Energy Consumption					
Effects on Ecosystems					

become official. If there is no consensus within the Committee, the Council of Ministers renders a final decision.

Stage III: Awarding products

Applications are accepted by Competent Bodies of member states, in the country where the product is manufactured, first marketed or imported to within the EC. The regulation states that the results of independent testing must be submitted with the application. It is expected that in the long term, a standard methodology for assessment procedures will be agreed to by all the parties involved. In the interim, arrangements are being introduced on a product-by-product basis. (*ENDS Report*, 1991c)

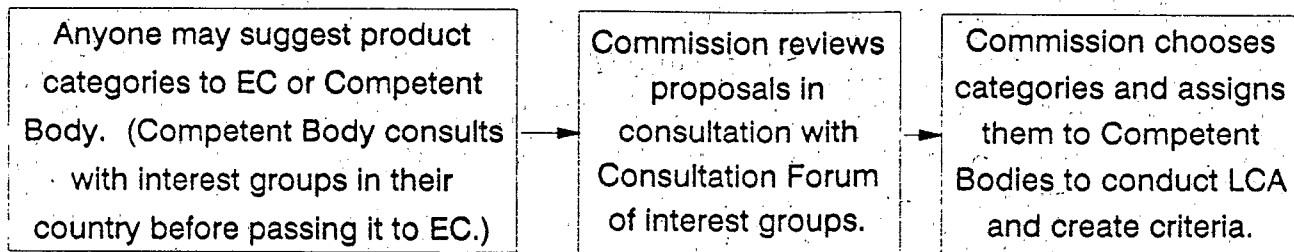
Throughout the award process, the confidentiality of applicants is maintained, as this is considered proprietary information. Awarded products are listed in the official publication, the *EC Journal*, and may use the flower logo generally for three years. At that time, they will be reassessed in light of any changes to the standards. There is an application fee of 500 ECUs to cover administration costs, and, if the product receives the award, an annual licensing fee calculated as 0.15 % of the annual volume of sales within the EC. These are guideline figures; Competent Bodies have the discretion to set actual fees at levels 20 percent greater or smaller than the guideline figures.

Public Review Process

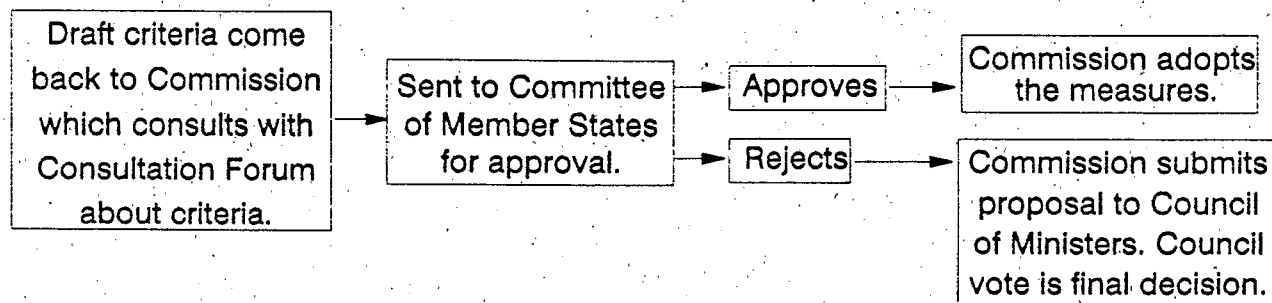
To ensure public access and review in the ecolabeling process, the EC has included the Consultation Forum of interest groups, composed of environmental and consumer groups,

Diagram of European Community Labeling Program

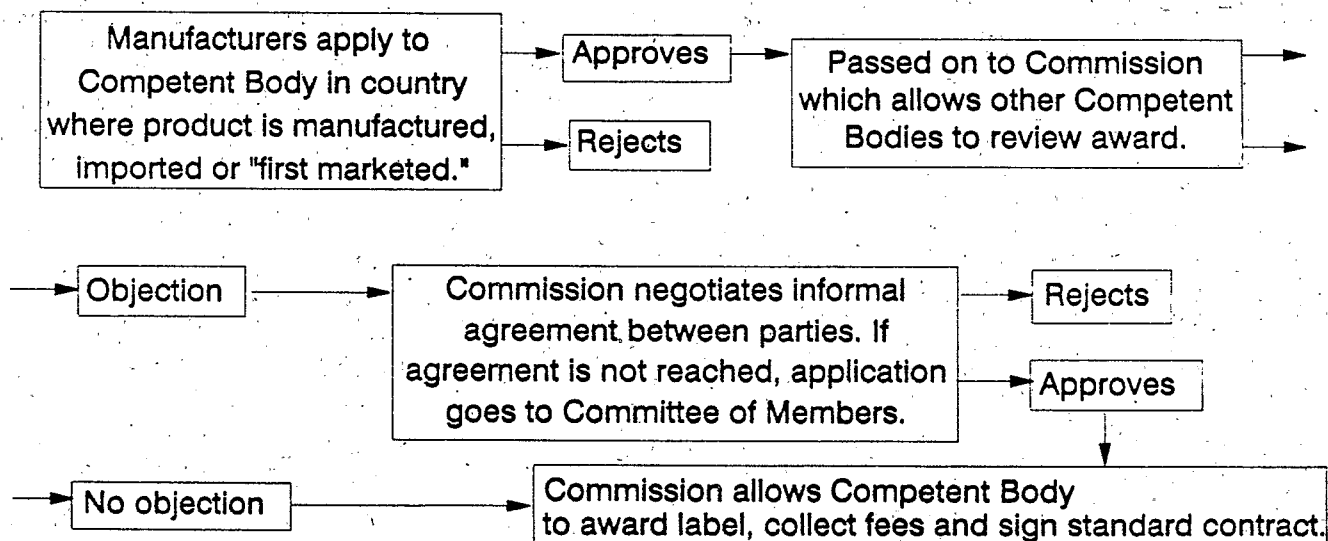
Stage I: Establishing Product Categories



Stage II: Setting Award Criteria



Stage III: Award Process



NETHERLANDS' STICHTING MILIEUKEUR



industry, and commerce. The original proposal would not have included this group, and would have given much less authority to the Competent Bodies. The European Bureau of the Environment (EEB) and the European Bureau of the Union of Consumers (BEUC) lobbied to have more say given to the environmental and consumer groups, due to the "ethical and societal choices involved", recommending even the power "to veto a decision... contrary to sustainable development." They also requested a right of individuals and groups to appeal awards any time after the award has been given. Finally, they stated that "every consumer has the right to be informed of the principal reasons for granting the eco-label", and to this end suggested an ecolabel with "full environmental information, i.e. qualitative and quantitative ingredients composition, processing procedures, re-use and/or recycling facilities." (EEB and BEUC, 1991) The first of these requests was granted by the EC, but individuals per se can only participate through the Consultation Forum representatives and by proposing product categories to the EC and Competent Bodies.

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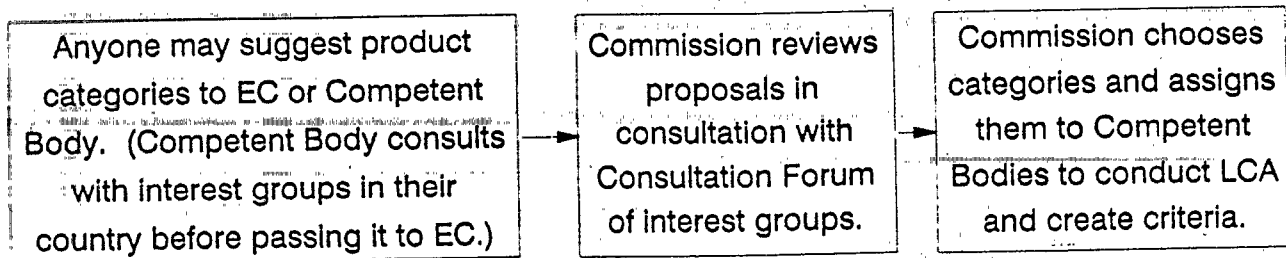
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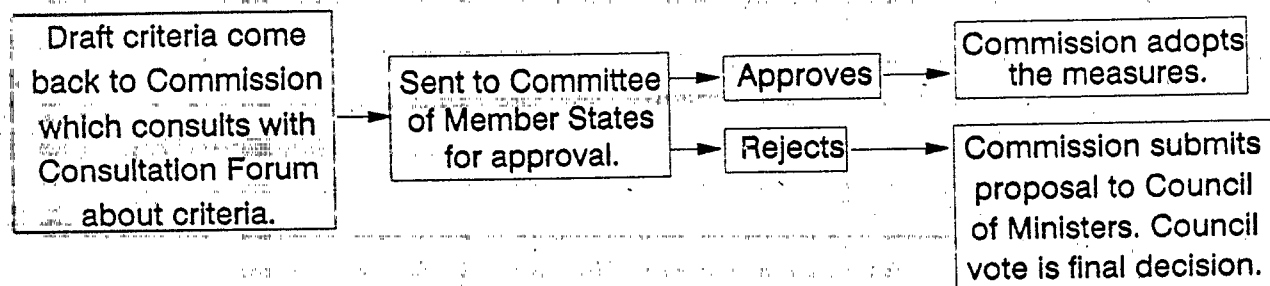
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Diagram of European Community Labeling Program

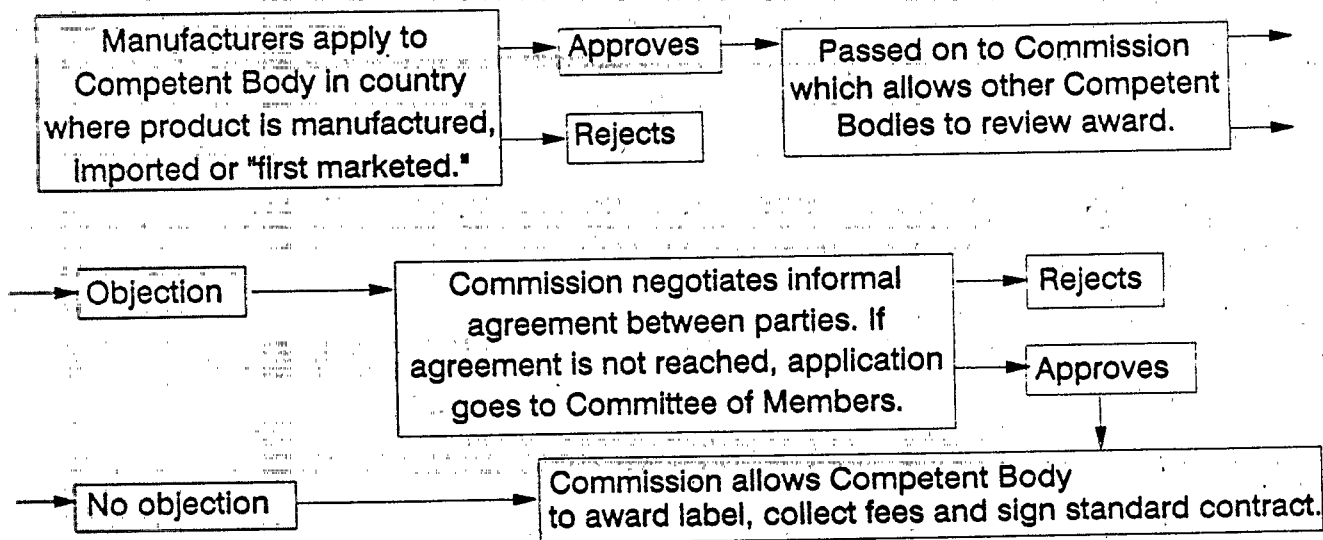
Stage I: Establishing Product Categories



Stage II: Setting Award Criteria



Stage III: Award Process



industry, and commerce. The original proposal would not have included this group, and would have given much less authority to the Competent Bodies. The European Bureau of the Environment (EEB) and the European Bureau of the Union of Consumers (BEUC) lobbied to have more say given to the environmental and consumer groups, due to the "ethical and societal choices involved", recommending even the power "to veto a decision... contrary to sustainable development." They also requested a right of individuals and groups to appeal awards any time after the award has been given. Finally, they stated that "every consumer has the right to be informed of the principal reasons for granting the eco-label", and to this end suggested an ecolabel with "full environmental information, i.e. qualitative and quantitative ingredients composition, processing procedures, re-use and/or recycling facilities." (EEB and BEUC, 1991) The first of these requests was granted by the EC, but individuals per se can only participate through the Consultation Forum representatives and by proposing product categories to the EC and Competent Bodies.

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NETHERLANDS' STICHTING MILIEUKEUR



STICHTING MILIEUKEUR OF THE NETHERLANDS

Introduction

Due to a growing interest in environmental issues in the Netherlands, the Ministry of Housing, Physical Planning and Environment, and the Ministry of Economic Affairs created a voluntary environmental certification system in April 1992. Prior to the creation of the Dutch Ecolabel, the government had established the Environmental Advertising Code to discourage the use of false environmental advertising claims. The Stichting Milieukeur takes the Environmental Advertising Code one step further by creating a seal-of-approval program similar to Germany's Blue Angel and Canada's Environmental Choice programs.

The Ecolabel program is governed by an independent organization, the Stichting Milieukeur (the Environmental Review Foundation), which is made up of representatives from government, consumer and environmental groups, manufacturers, and retail organizations. Although the European Community is currently developing an ecolabel, the Dutch government proceeded with its own program to better accommodate goods and services unique to the Dutch market. As of October 1992, the Stichting Milieukeur had set and published the award criteria for the following product groups: writing paper and notepaper, light sources, and handshowers. The first ecolabel is expected to appear in Fall 1993. (Bölger, 1993)

Structure

Although the program was founded and is supported by the Dutch government, the Stichting Milieukeur operates the ecolabeling program independently of the government. The Stichting owns the ecolabel, sets the standards, awards the ecolabel to products, and monitors use of the ecolabel. The Stichting Milieukeur was launched on the initiative of the Dutch Ministries of Environment and Economic Affairs. The Stichting will be subsidized by these Ministries until 1996, starting with 100 percent in 1992 and decreasing each following year. The Stichting Milieukeur plans to be completely self-supporting by 1997. The Stichting Milieukeur is divided into four organs which act cooperatively in the implementation of the program. These four organs, the Panel of Experts (College van Deskundigen), the Supervisory Council (Raad van Toezicht), the Board (Bestuur), and the College for Appeals (College van Bereop), are briefly described below:

- The *Panel of Experts* consists of representatives from government, manufacturers, consumers groups, environmental groups and retailers. The Panel determines the criteria which products have to meet in order to qualify for certification. Individual members contribute their expertise to the standard setting process. The Panel thoroughly discusses the standards and releases a draft "certification schedule." (Bölger, 1993)

- The *Board* makes the final decisions regarding the adoption or rejection of product group definition and award criteria. The Board may also refer the criteria back to the Panel of Experts for further examination.
- The *College of Appeals* hears complaints about the Stichting Milieukeur's decisions. The Stichting Milieukeur is in the process of developing rules that will govern the appeal procedures.

Award Process

Criteria will be developed only for product groups in which there are clear differences in environmental quality among products in the same category. If all products within a particular group are similar with regard to environmental impact, the Stichting Milieukeur feels that there is no point in developing criteria or certifying products for that category. Standards will be set based on a "cradle to grave" life-cycle analysis and will be reviewed about every 3 years. Award criteria are based upon the "best available technology," and will always be more stringent than relevant regulations. In this way, only a limited number of products will qualify for the certification. (BNA, 1992) In addition, standards of quality and packaging requirements are also considered during the development of the criteria.

Stichting Milieukeur does not create product standards on its own initiative, but rather accepts requests from manufacturers, consumer groups, trade associations, or any other interested party. Once the requirements for a product category have been set and published, any manufacturer or importer can submit their product for evaluation by one of the recognized Certification Authorities. The cost of processing an application varies, depending on the complexity of the certification process.

Stage I: Requesting a New Product Category

A request for developing criteria for a new product category must be made. Anyone can submit a request to the Stichting Milieukeur Board, which may approve or reject an application for a new product category. "The main priority in deciding whether the environmental labelling system should be applied to a particular group of products is to establish whether the environment will benefit." (The Dutch Ecolabel, 1992)

Stage II: Developing Award Criteria

If the request for the inclusion of a product category is granted by the Board, the Panel of Experts then conducts a first screening investigation. The Panel charges a Specialist Research Institute (private or public) to conduct a study, looking at all aspects of the product, from "cradle to grave", in order to draft award criteria for the product category. Specialist Research Institutes conduct studies for proposed standards because the Stichting does not have the capacity

or the knowledge to research product criteria. Research Institutes are chosen based on its expertise of the product, research experience, staff, and price.

Stage III: Public Review

The proposed standards are then discussed at a meeting of the Panel of Experts which is open to all interested parties. Participants include the applicant, selected manufacturers, and representatives of consumer, environmental, and professional associations. (BNA, 1992) A report on the proceedings of this public meeting is made available to the Panel of Experts, which then delivers its recommendations to the Stichting Milieukeur Board. The Board makes the final decision on whether the standards should be made official. At this time, the College of Appeals hears complaints about decisions made by the program.

Stage IV: Applying for Certification

Once the requirements for the product category are approved and published, individual manufacturers and importers may submit a product for individual certification to the Certification Authority. The applicant must persuade one of the Certification Authorities that its product meets the standards.

Stage V: Awarding the Ecolabel

Certification Authorities, recognized by the Dutch Council for Certification, assess whether or not a product meets the defined standards. If a product meets specifications, the Certification Authority awards the applicant the use of the logo. Manufacturers sign a contract with the Certification Authority, which sets out the conditions for use of the ecolabel. The applicant signs a contract with the Certification Authority, which sets out the conditions under which the logo may be used. An annual fee will be required for the use of the certification.

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FRANCE'S NF-ENVIRONNEMENT

FRANCE'S NF-ENVIRONNEMENT

Introduction

The NF-Environnement certification program is a national, voluntary seal-of-approval ecolabel developed for the French market by the Association Francaise de Normalisation (AFNOR). According to AFNOR, the program is intended "to certify products that have a less adverse impact on the environment...when compared with other...products available on the market" (General Rules, 1992). The program's operation is based on the following principles:

- (1) Certificates must be issued on the strength of finding actual compliance with "meaningful certification criteria," defined in technical rules developed jointly by the economic parties concerned and approved in accordance with the law.
- (2) Arrangements for evaluation and surveillance must be established to ensure that the firms to which the ecolabel is granted offer for sale products that actually conform to these criteria.
- (3) Consumers must have access to information about the certificate that is not subject to any ambiguity of interpretation (General Rules, Appendix I, 1992).

NF-Environnement plans to coordinate its efforts with other European programs, "both through the process of harmonization of standards and through its participation in European reciprocal recognition agreements." (General Rules, 1992) In light of this, product criteria for paints and varnishes were approved on June 3, 1992, based on a study originally conducted for the EC ecolabel. To date, however, this is the only product category for which the NF-Environnement has certified products.

On June 24, 1992, work on NF-Environnement was suspended by the Labeling Committee of AFNOR, pending a re-evaluation of its methodology. Having originally planned to use a multi-criteria matrix similar to Blue Angel and the EC ecolabel, AFNOR is now proposing to use a complete life cycle analysis (LCA).

NF-Environnement plans to issue its first product standards based on this new methodology, for trash bags, in March 1993. To finance the cost of testing products in this manner, companies desiring a new product category must pay fifty percent of the cost of an LCA. Once the LCA is completed and product criteria have been set, applicants for certification are required to pay a registration fee, a repayment of costs incurred to verify a claim, and an annual royalty for use of the ecolabel. (Ventere, 1992)

Structure

The French environmental certification program involves five functional roles (filled either by groups or individuals):

- The *Association Francaise de Normalisation* (AFNOR), which administers the program and issues awards, appoints members to the Label Committee, selects the "Expert" to prepare a report on a product category's acceptability, and makes the final decision on a product category and its "Technical Rules" (the criteria which products must meet to receive the award).
- The *Reporter*, selected by AFNOR with the approval of the Label Committee, drafts the technical rules for a product category. One "Reporter" is selected for each proposal. He/she may consult other groups in this process.
- The *Label Committee* consists of 17 members appointed by the Director-General of AFNOR, in agreement with the Minister of Industry, the Minister of Environment, and the Minister of Consumer Affairs. There are 6 representatives from industry, 3 representatives from consumer organizations, 3 representatives from environmental-protection groups, and a representative each from the Minister of Environment, the Minister of Consumer Affairs, and the Minister of Industry. The Chair of the Scientific Council and a representative of AFNOR are standing members of the Committee. There is also a Secretariat provided by AFNOR which oversees the technical and administrative issues of the program. Members hold office for 3 years and may be reappointed. The Chair of the Committee is elected for a one year term, with the industry representatives alternating with the environmental and consumer representatives in the chair.

The Committee is responsible for the development and administration of the NF-Environment program. It gives opinions on the draft product criteria used to evaluate products within a category, approves AFNOR's choice of Reporters for the draft of the Technical Rules, monitors the work of the Experts and Reporters, appoints the Scientific Council, and set royalties.

- The *Scientific Council* advises the Label Committee. Its tasks include 1) proposing suitable Experts and Reporters to be called upon for the technical administration and development of the program; 2) consulting on the methods used to evaluate product criteria and the harmonization with other programs; 3) intervening, at the request of the Committee and/or AFNOR, on any point requiring technical and scientific expertise, for example in matters relating to the validation of technical rules; and 4) maintaining a permanent technological monitoring service.
- The *Experts* are individuals appointed by AFNOR, on the recommendation of the Council, who evaluate applications for certification for existing product categories, and recommend to AFNOR that a product be accepted or rejected. There is one Expert for each application and he/she is responsible for examining the application, visiting the applicant to validate that the product adheres to the technical rules or to determine if "further tests or inspections [are] required to

demonstrate the conformity of the product to all the applicable certification criteria and then to assess the results." (General Rules, 1992)

Award Process

The NF-Environnement award process consists of four stages. Any interested group may apply to AFNOR for the preparation of Technical Rules for a given product category. Once AFNOR has decided that Technical Rules should be drafted, it assigns a Reporter to draft Technical Rules that are reviewed by the Label Committee. Once the draft is accepted by the Label Committee, it is sent to the Director-General of AFNOR and the public authorities to accept, reject, or send back for revision. Once the criteria have been approved, interested parties may apply for certification. The application is reviewed by the Expert appointed by AFNOR; the final decision is made by AFNOR. If the award is granted, the applicant pays an annual royalty to use the logo.

Stage I: Choosing Product Categories

Product categories may be proposed to AFNOR by any interested party. AFNOR, on the advice of the Label Committee, decides whether the proposal is acceptable in principle. The Committee bases its recommendation on the assessment of (1) the scientific foundation, (2) the acceptability to consumers, (3) the technical and economical feasibility and (4) the proper integration of the proposal in the context of the NF-Environnement program. "When a proposal is judged acceptable, AFNOR, with the approval of the Label Committee, names a Reporter, whose task will be to draft Technical Rules based on the proposal submitted to AFNOR, working closely with the parties concerned." (General Rules, 1992)

Stage II: Drafting Technical Rules

When drafting the Technical Rules, the Reporter must define specifically 1) the category of products concerned, 2) the environmental-impact criteria, and 3) "the requirements and acceptable limit values adopted when the quantification of environmental criteria is founded on a scientific basis." (General Rules, 1992)

The Technical Rules for paints and varnishes used a life cycle matrix, but not all criteria were selected (see table). Certain criteria in the Technical Rules may be deferred "pending the solving of the specific problems they raise." (General Rules, 1992) As of June 24, 1992, however, AFNOR has suspended all work currently being done to establish Technical Rules based on a complete life cycle analysis.

Stage III: Approval of Technical Rules

Draft Technical Rules are submitted by the Reporter to the Label Committee for review and a recommendation. "After advice from the Label Committee, it is the responsibility of the Director-General of AFNOR and the public authorities...to evaluate to what extent the criteria

TABLE OF CERTIFICATION CRITERIA ADOPTED FOR PAINTS AND VARNISHES							
STAGE OF PRODUCT LIFECYCLE	EVALUATION CRITERIA						
	Use of natural resources, raw materials, energy	Pollution and deterioration of physical environment , water, air, earth	Noise	Waste	Impact on ecosystems	Other damage	Impact on Man
Extraction of raw materials							
Production : 1) procurement 2) manufacture		X		X	X		X
Distribution: 1) conditioning 2) packaging 3) transport							
Use and/or consumption		X		X	X		X
Disposal after use: 1) product treatment/recyc ling 2) packaging treatment/ recycling		X			X		X

X = Criteria that were selected

adopted are significant enough to justify granting the Label." (General Rules, 1992) When approval has been granted, AFNOR communicates the Technical Rules to firms who may be interested in obtaining certification.

Stage IV: Awarding Ecolabels to Manufacturers

For each application for NF-Environnement certification, AFNOR appoints an Expert to prepare a report proposing that the application be accepted or rejected. The appointment of a particular Expert can be challenged once by the applicant.

The manufacturer must pay a flat-rate registration fee (~ 12,500 Francs) to cover the costs of processing the application and repay the costs of verifying that the product conforms to the Technical Rules, as well as make an annual royalty payment (0.1 % of the product sales, minimum 7,500 Francs) for the right to use the NF-Environnement logo.

Stage V: Monitoring

Tests and inspections will be performed once a year in the first two years following certification. After the first two years of operation, the periodic tests and inspections will be performed every two years if no infraction of the use of the logo has occurred. "On the other hand, the frequency of tests and inspections may be increased from the first year onwards, upon the Committee advising that this is warranted by the standard of organization reached by the applicant for product quality control purposes." (General Rules, 1992)

Public Review Process

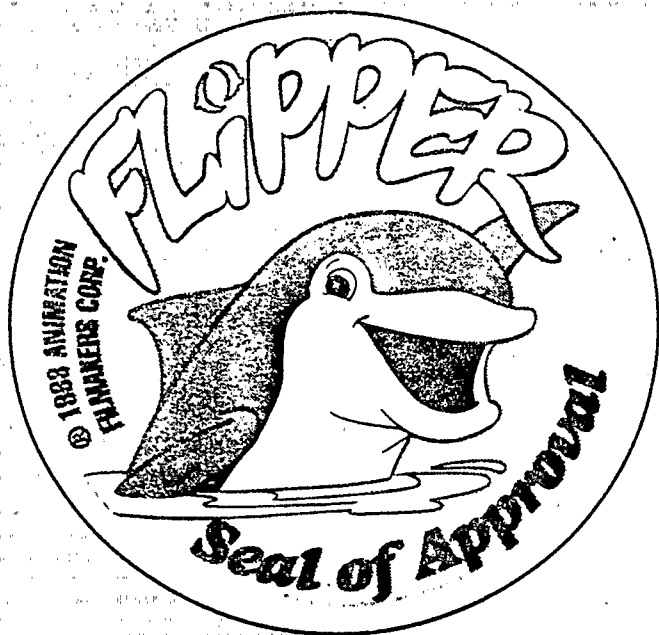
While there is representation from industry, environmental and consumer groups, and government on the Label Committee, there is no official public review.

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FLIPPER SEAL-OF-APPROVAL



FLIPPER SEAL OF APPROVAL

Introduction

The Flipper Seal of Approval is an international seal-of-approval program run by Earthtrust, a nonprofit wildlife conservation group. The Flipper program is solely interested in protecting dolphins from fishing practices that maim and kill dolphins. The program is designed to encourage tuna companies to purchase tuna caught by dolphin-safe fishing practices and to take proactive effort to protect dolphins and promote their welfare.

The Flipper program examines all facets of a company's corporate policy that may affect dolphins, including the fishing techniques of tuna suppliers, activities of subsidiaries and parent companies, and involvement in dolphin protection efforts. Tuna firms that apply for and meet the program's standards for "dolphin-saving" can license and display the Flipper Seal on their tuna products. Flipper standards are more stringent than those established by the Dolphin Protection, Consumer Information Act (DPCIA), a Federal law that took effect in September 1991. One of Flipper's goals is to help the tuna consuming public distinguish between those companies that are actively dolphin-saving, as opposed to those which merely meet the requirements of DPCIA.

The Flipper Seal of Approval is endorsed by 23 environmental organizations from around the world. There are currently seven tuna companies in the U.S. and other countries that are licensed with the Flipper Seal of Approval.

Structure

Earthtrust, a nonprofit tax-exempt wildlife preservation organization based in Kailua, Hawaii, is the sole licensor for the Flipper Seal of Approval. Other Earthtrust campaigns include the Driftnet Campaign, the Save the Whales Campaign, Project Delphis (research in the mental abilities of dolphins), and the Asian Wildlife Initiative.

The *Earth Island Institute* (EII) of San Francisco, the leading conservation organization monitoring the tuna industry, established the licensing standards which Flipper uses. EII also runs the tuna company monitoring program, in cooperation with other dolphin conservation groups.

Award Process.

The Flipper program uses the same standards for dolphin safety as Earth Island Institute (EII). The monitoring program is run by EII and other conservation organizations, which have access to the factories, loading docks, and purchasing/sales records of certified tuna firms.

According to program literature, "the Flipper program contracts include the right to examine records of licensed tuna companies, and to place observers in company facilities. If

found to be in violation of the agreement, the company is first warned; its licensing of the Flipper Seal is revoked if problems are not corrected." (Earthtrust, 1992)

To receive the Flipper Seal of Approval, a tuna company must agree to:

- 1) Maintain a corporate policy to kill no dolphins;
- 2) Enforce this policy in all of its operations worldwide, including its subsidiaries and their parent companies;
- 3) Not purchase, process, or sell any tuna that was caught by driftnets or gillnets, or by the intentional setting of purse-seine nets on dolphins;
- 4) Allow independent monitoring personnel to examine records and operations at the tuna firm's factories and docks, in order to certify compliance;
- 5) Require its suppliers to provide credible guarantees that dolphins were not harmed in the capture of tuna;
- 6) Provide the Flipper program with any information on dolphin-unsafe practices of which it becomes aware;
- 7) Pay an annual licensing fee to the Flipper program, which helps fund the global monitoring program;
- 8) Work internationally to support the concept and practice of dolphin-safe seafood as an example of corporate environmental responsibility; and
- 9) Engage in pro-active dolphin-protection activities, such as educational programs, to further promote the welfare of dolphins. (Earthtrust, 1992)

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SCIENTIFIC CERTIFICATION SYSTEM'S FOREST CONSERVATION PROGRAM



CERTIFIED

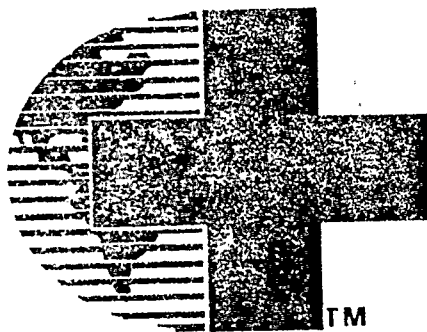
This wood was harvested
from a State-of-the-Art
Well-Managed Forest*

SCIENTIFIC CERTIFICATION SYSTEMS

* Collins Pine Co., Chester CA Div.
Collins Almanor Forest

Certification Scores:	
SUSTAINABLE HARVEST	86
ECOSYSTEM HEALTH	81
COMMUNITY BENEFITS	83
(100 = Maximum Possible Score)	

SCIENTIFIC CERTIFICATION SYSTEM'S FOREST CONSERVATION PROGRAM



CERTIFIED

This wood was harvested
from a State-of-the-Art
Well-Managed Forest*

SCIENTIFIC CERTIFICATION SYSTEMS

Collins Pine Co., Chester CA Div.
Collins Almanor Forest

Certification Scores:

SUSTAINABLE HARVEST	86
ECOSYSTEM HEALTH	81
COMMUNITY BENEFITS	89
(100 = Maximum Possible Score)	

SCS FOREST CONSERVATION PROGRAM

SCS's Forest Conservation Program (FCP) is designed to evaluate forest management and timber harvesting practices. According to SCS, the program's goal is to "provide independent feedback to timber operation managers regarding the relative sustainability of their practices, and to assist retailers, product manufacturers and...consumers in their efforts to make sensible wood purchasing decisions." (SCS, 1993a)

SCS uses a 100 point index to evaluate the management of forestland tracts (called "management units") by timber operations with respect to the following three program elements, or evaluation categories:

- sustainability of timber resources
- forest ecosystem maintenance
- socio-economic benefits to the surrounding community.

A set of site-specific evaluation criteria are selected for each category by an "interdisciplinary Evaluation Team." For example, relative sustainability of timber resources may be measured through the rate of harvest as compared to growth, the age of the trees harvested, long term productivity of the harvest sites, and harvesting efficiency. For each category, a score on a normalized, 100 point scale is assessed after the examination of these criteria. (SCS, 1993b) These scores reflect the extent to which the timber operation under review meets the ideal management practices (as defined by the Evaluation Team) for its own management units. A timber operation under review is not directly compared against other timber operations.

SCS gathers data for its analysis from information supplied by the landowner and field data collected by the Evaluation Team. If necessary, SCS will verify the landowner supplied information through observation and field sampling. A periodic monitoring program is installed by SCS to ensure that participating timber operations continue to meet standards.

Timber operations that have been thoroughly evaluated may communicate SCS's findings via marketing claims to the public through a special label developed by SCS.

Structure

For each evaluation, SCS organizes an *Evaluation Team* composed of SCS staff and "contract/consultant field-level personnel with expertise in relevant disciplines (e.g., forestry, wildlife ecology, hydrology, sociology and natural resource economics)." (SCS, 1993a) A field team made up of members of the Evaluation Team makes on-site visits of the management units to gather data.

FCP Operational Process

Stage I: Contractual Agreement

A contractual agreement between SCS and the timber company under review establishes the scope of the study, and delineates rights and responsibilities for each party. The timber operation may use the results of the study in marketplace claims only if the scope of the study includes all evaluation categories for all of its management units. (SCS, 1993a)

Stage II: Assembling the Evaluation Team

After the contract has been drawn up, SCS assembles an Evaluation Team, composed of SCS staff and "contract/consultant field-level personnel with expertise in relevant disciplines." The Evaluation Team designates a field team to gather field data, and is itself responsible for compiling and analyzing "all pertinent, available information on the property's resource conditions and management plans in order to arrive at criterion-specific scoring for each of the three program elements." (SCS, 1993a)

Stage III: Data Collection and Analysis

The Evaluation Team collects quantitative and observational information about resource conditions on the property and the landowner's management plans for the area. Information sources include:

- plans and data submitted by the landowner;
- empirical data and observations gathered by the field team;
- published data on habitat occurrence and wildlife population statistics;
- local, state, or federal forestry agencies that monitor forest practices or are familiar with the subject property;
- interviews with non-governmental organizations, employees, and community members who are familiar with the subject property.

SCS notes that the management plans of the landowner weigh very heavily in the evaluation, and are scrutinized for their "technical veracity and overall implementability." (SCS, 1993a)

Stage IV: Criterion Selection and Weighting

From a pre-established set of potential criteria, the most relevant criteria, as defined by the Evaluation Team, are used for the data evaluation. If field data indicates a need, the

evaluation criteria may be modified to "better focus on key ground-level parameters and conditions" for the specific site. (SCS, 1993a) Criteria are then weighted by their relative importance, also as determined by the Evaluation Team.

Stage V: Performance Ranking

After the criteria have been chosen and the data have been analyzed, the Evaluation Team "assesses the extent to which management of the selected land tract meets the underlying objectives and goals associated with each evaluation criterion." According to SCS, performance of a timber operation is measured relative to the full attainment of sustainable forestry objectives for those management units under review. A timber operation under review is not compared against other timber operations, although in practice various evaluation criteria for different timber operations may be very similar. Timber operations are scored on a normalized 100 point scale. (SCS, 1993a)

Stage VI: Chain-of-Custody Review

In order to make marketing claims based on SCS's evaluation, manufacturers and retailers using raw timber or finished products that are derived from evaluated sources must undergo a "chain-of-custody" review. A chain-of-custody review uses various tracking and tagging techniques to verify that all the participants along the distribution chain are handling the product that was originally evaluated by SCS. (SCS, 1993a)

Stage VII: Awarding Certification

SCS has developed a labeling system to convey evaluation results for those companies that have undergone a "sufficiently thorough" evaluation and wish to communicate their findings to the public. Timber operations must receive scores above 60 for each of the program elements in order to make a public claim. These operations are designated as "Well-Managed." Timber operations which place in the top 10 percent of the "Well-Managed" category are further identified as "State-of-the-Art." (SCS, 1993a)

References

SCS, 1993a. Fact sheet: "The SCS Forest Conservation Program."

SCS and the Collins Pine Company, 1993b. Joint press release: "New, Scientific Approach to Build Consensus on the Protection of Jobs, Trees, and Wildlife Unveiled - Program Launched with Study of Model U.S. Timber Operation."

WAL-MART

WAL-MART

The nation's third largest retailer announced in August 1989 that it would promote products "that have been improved to prevent lasting environmental problems" by means of a shelf labeling program. (Fisher, 1989) "The Wal-Mart tag does not say the product is safe. What it does say is an improvement has been made," said Paul Higham, vice president of marketing. "If you try to have something that is a shortcut, like a symbol, people might assume it is safe or not. You might not be as definitive as you ought to be." (Fisher, 1991)

In October of that year, products began appearing on its shelves accompanied by shelf tags commending the manufacturers and noting the specific environmental improvement. Manufacturers requested labeling from Wal-Mart and provided documentation, and Wal-Mart made the final decision on the shelf tag. (Fisher, 1989) Wal-Mart also set up recycling collection centers in the parking lots of its 1,500 stores across the country.

Wal-Mart ended its shelf labeling program in 1992, for a number of reasons. The main problem was that varying state laws made it difficult and expensive to make environmental claims, and the risk of breaking a law in one of their numerous stores outweighed the benefits. Jan Maulden, Environmental Marketing Manager, cited New York's law on recycling claims as well as state laws in Florida, South Carolina and California as limiting environmental marketing activity in those areas. Since the shelf labeling programs were run by the corporate office but implemented by each individual store there was a concern that some mislabeling would occur. Wal-Mart has a shelf label promoting products made in America; problems with this program were the subject of an ABC "Nightline" exposé that generated a great deal of negative publicity.

Another significant worry for the legal department at Wal-Mart was that consumers may be misperceiving the shelf tags as a general approval of the product's "environmental friendliness" and that Wal-Mart would be liable for making misleading claims. A further legal complication was that Wal-Mart was relying on information provided by the suppliers; thus, it was necessary to develop a "paper trail" to track the claim back to its original source. A final concern was that suppliers may complain that a shelf label would make an unfair comparison between two brands, although this had not yet become a problem.

Currently, Wal-Mart is trying different approaches to promoting environmental products, mostly by educating consumers about environmental issues and encouraging marketers to make environmental improvements. In Lawrence, Kansas, an "environmental demonstration store" is opening that will serve as a test site for different marketing programs. Shelf labels will be used, but they will not promote specific products; instead, they will "tell corporate stories" — acknowledging companies for general improvements made to products or packaging. There will also be a number of "generic" signs with information on environmental issues.

References

Fisher, Christy, 1989. "'Seal of Green' Planned," *Advertising Age*, November 20.

Fisher, Christy, 1991. "Tending Wal-Mart's Green Policy," *Advertising Age*, January 29.

Maulden, Jan, Environmental Marketing Manager, Wal-Mart, 1993. Personal communication with Abt Associates, March 31.

WHOLE EARTH ACCESS

WHOLE EARTH ACCESS

Whole Earth Access is a chain of six retail stores in the San Francisco Bay area operated by Basic Living Products, Inc., of Emeryville, California. It was originally associated with the Whole Earth Catalog, a long-time source of environmental and socially conscious products, but the stores are not direct retail outlets for products offered in the Whole Earth Catalog.

Whole Earth Access does some shelf labeling "to highlight products that are an alternative to mainstream America," according to buyer Brenda Tong. The labeling is determined by each merchandise buyer based on manufacturer claims, combined with whatever additional information each buyer deems necessary to verify the claim. Ms. Tong often requests additional information from manufacturers and "personally tests" products. In addition, she will give a product a shelf label if it has already been certified by SCS or approved by People for the Ethical Treatment of Animals (PETA).

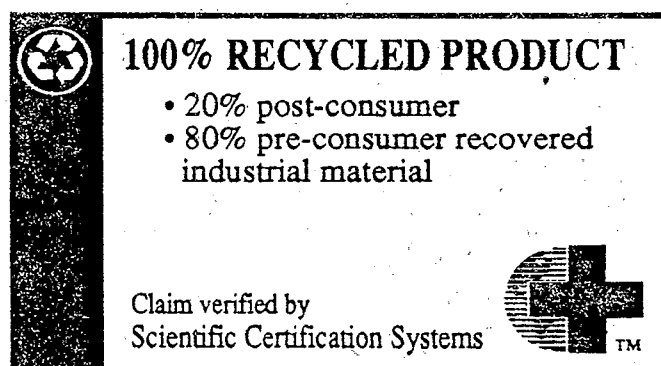
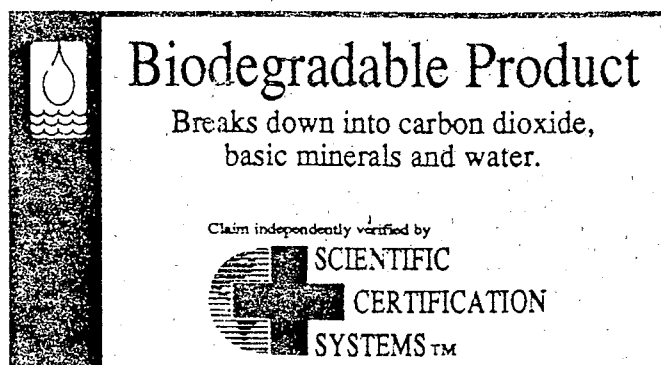
Although Whole Earth stores have promoted "environmentally friendly" products for the 15 years of their existence, there does not seem to be a cohesive program. Shari Rigdon, Advertising Manager for the company, says that Whole Earth does not "do that corporate stuff." (Rigdon, 1992) Since each store and buyer marks products as they see fit, the corporation does not keep track of the number or types of products that are promoted as "environmentally friendly." Some products marked include unbleached bed sheets and greeting cards made with recycled paper.

References

Tong, Brenda, 1992. Whole Earth Access, personal communication with Abt Associates, September 25, 1992.

Rigdon, Shari, 1992. Whole Earth Access, personal communication with Abt Associates, October 16, 1992.

SCIENTIFIC CERTIFICATION SYSTEM'S ENVIRONMENTAL CLAIMS CERTIFICATION



SCS ENVIRONMENTAL CLAIMS CERTIFICATION

According to Scientific Certification Systems (SCS), single claim certification is designed to provide "independent assurance that specific environmental claims made by manufacturers" are accurate and represent "significant environmental accomplishments." (SCS, 1992a) To date, more than 500 claims have been certified in the areas of:

- Recycled Content (state-of-the-art)
- Recycling Rates by Material
- Biodegradability
- Energy Efficiency
- Water Efficiency
- No Smog Producing Ingredients (VOCs)

After a product has been certified, its packaging may display an "authorized certification emblem" accompanied by an exact description of the verified claim. SCS emphasizes consumer education by providing product shelf signs, information printed on the products, and special educational material prepared by manufacturers and retailers.

In 1991, SCS announced joint efforts to establish an environmental claims review program for Home Depot, a nationwide retailer. Under this program, SCS is working with Home Depot to verify the accuracy and significance of claims made for products that Home Depot stocks. SCS also started similar programs in 1992 with the Home Center Institute and the National Retail Hardware Association, which are two trade associations that represent the entire retail hardware and home improvement industry. (SCS, 1992b)

Certification Process

- Stage I:** The manufacturer signs a contract with SCS, agreeing to disclose information relevant to the claim. All sensitive product information will remain confidential.
- Stage II:** The manufacturer releases the information to SCS, which is reviewed by SCS staff. If necessary, additional product testing may be required to confirm the information.
- Stage III:** SCS performs on-site inspections to verify information.
- Stage IV:** SCS performs an audit of detailed plant records.
- Stage V:** SCS consults independent databases to compare the product's attributes with the industry norm.
- Stage VI:** Certification is issued or denied.

Stage VII: Monitoring: Once certification is awarded, SCS reviews and updates certification records on an annual basis to make sure that the certified product continues to perform to required specifications. Quarterly monitoring is required for recycled content and recycling rate certifications.

References

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Scientific Certifications Systems Press Release, 1992b. "Home Center Institute, National Retail Hardware Association Join with Scientific Certification Systems to Establish Program to Screen 'Green' Claims," April 23.

Smith, R. Justin and Richard A. Denison, 1991. *At Cross Purposes?: A Critical Examination of Green Cross's Environmental Record*, Environmental Defense Fund, Washington, D.C., September 30.

ENVIRONMENTAL CHOICE AUSTRALIA

A U S T R A L I A
**ENVIRONMENTAL
CHOICE**

A U S T R A L I A

ENVIRONMENTAL CHOICE AUSTRALIA

The stated goals of the Environmental Choice Australia (ECA) Program are to ensure that "environmental claims made about products and services are both meaningful and truthful" and that "consumers and the providers of products and services are educated and informed on the environmental impacts of products and services." (ECA, 1992) To these ends, in October 1991, Australia initiated an environmental claim verification program, education and information programs, environmental legislation, and programs that encourage manufacturers to lessen environmental impacts throughout their design and production processes.

The ECA program is currently undergoing a review as part of the original agreement made between ECA and the Australian and New Zealand Environment Conservation Council (ANZECC). Some of the proposed changes include: 1) a requirement that all products participating in ECA must meet all relevant Australian regulations and State and Commonwealth environmental legislation; and 2) a classification of environmental claims into broad categories such as "reduced resource usage" and "reduced energy use". (Doyle, 1992)

According to sources at the ECA, the program has encountered significant resistance from industry. Industry groups hold the view that government involvement in environmental advertising "should be confined to ... education" and that "industry should be self-regulating." To this end, some industry groups have developed their own "codes of ethics and charters." (Doyle, 1993)

ECA also relates that they are having some problems with consumer understanding of the logo. Even though all of ECA's educational materials emphasize that ECA only verifies a manufacturer's environmental claims, consumers continue to interpret the presence of the logo on a product as an endorsement of that product by the program.

Structure

Environmental Choice Australia is run under the auspices of ANZECC, the *Australian and New Zealand Environment Conservation Council*. The Commonwealth Environment Minister oversees the program on behalf of ANZECC. Environmental Choice Australia is expected to harmonize closely with Environmental Choice New Zealand.

In addition to ANZECC, a *Scientific Committee* has been proposed to provide advice on environmental claim verification, definition of terms, and testing processes to be used to validate claims. Also, a broadly-based *Advisory Committee* including representatives from government, industry, consumer, and environmental groups consults on all aspects of Environmental Choice.

"The Commonwealth has advised it will provide the running costs for administration of the scheme, covering the secretariat, random testing, Committee costs, office accommodation and equipment." (ECA, 1992)

Environmental Claim Verification Process

Environmental Choice Australia is a voluntary program that gives government approval to those product environmental claims that can be tested and quantified. If a manufacturer and its product pass the required tests, the product may display the Environmental Choice logo. The text on the logo reads "Environmental Claims Checked by Environmental Choice Australia." Environmental Choice has categorized possible claims as follows:

- 1) claims that can be quantified;
- 2) claims dependent upon common understanding of terms used;
- 3) meaningless claims;
- 4) misleading claims.

Manufacturers applying for verification are not allowed to use claims that fall under categories (3) or (4). For example, a verified product cannot claim that it is free of a specific chemical which is not usually contained in that type of product anyway. Products can claim to be free of an ingredient only if they present an "analytical report from a recognised laboratory" that supports that claim. According to the program, "[a]ll products submitted for verification of their claims will have to be formulated to do what they are supposed to do," although their effectiveness is not measured as part of the verification.

Manufacturers who participate in the program must agree to:

1. Ensure that the interests of consumers are maintained by the development of product testing procedures designed to ensure the integrity of product environmental claims.
2. Verify or establish claims concerning environmental benefits by appropriate testing procedures using where necessary approved laboratories, and advise Environmental Choice of the way in which claims have been verified.
3. Ensure that all product claims use words in accordance with standard definitions developed by Environmental Choice in conjunction with interested parties, for example, "biodegradable" or "recyclable."
4. Avoid the use of general, meaningless or illusionary statements including pictures and graphics implying the product is "environmentally safe," "environmentally beneficial," "harmonious with the environment" or the like in product claims, advertising, or promotional material.
5. Relate all environmental claims to the manufacture, composition, or use of the product including disposal of packaging and subsequent decomposition.
6. Participate with Environmental Choice in promoting manufacturing, packaging and distribution processes that have minimal impact on the environment, as well as seek to

remove processes that have a detrimental impact on the environment in the production, use and/or disposal of products and/or services.

7. Collaborate with Environmental Choice in the development of and participation in consumer education Programs, and prepare and distribute information to consumers which will enhance the community's awareness of environmental issues relevant to the participant's products and services, and the lesser impacts of the participant's product on the environment.
8. Ensure that they and their staff are familiar with, and comply with, the provisions of the Environmental Choice Code of Ethics.
9. Refrain from promoting or marketing products with harmful environmental impacts on the basis of a minor environmental benefit, such as a toxic product marketed in a reusable container.
10. Refrain from words that would not generally be understood by the "average shopper" when making environmental claims.

Enforcement

Environmental Choice Australia states that it will perform random testing of products and services to ensure that providers of products and services, regardless of whether they participate in the Environmental Choice program, remain honest. Because they are a governmental organization, they have the authority to prosecute manufacturers who make false claims. Fines up to \$100,000 (companies) and \$20,000 (individuals) may be levied on those parties who are caught making false product claims.

References

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Environmental Choice Australia, 1992. Information package.

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EPA ENERGY STAR COMPUTERS PROGRAM



EPA POLLUTION PREVENTER

EPA ENERGY STAR COMPUTERS PROGRAM

In June 1992, the EPA launched the Energy Star Computers program to promote the introduction and use of energy efficient personal computers, printers, and peripherals. Designed as a voluntary partnership effort between EPA and the computer industry, each participating company has agreed to introduce computers, monitors, or printers that switch to a low power state when left idle. In the low power state, a computer component drops its power draw to 30 watts or less, a 50-75 percent reduction compared to normal power draw. Companies that market qualifying products may use the EPA Energy Star logo to identify those products. EPA emphasizes that the purpose of the Energy Star logo is to promote energy efficiency only, and that EPA does not endorse any particular product. Participants in the program are required to note this wherever and whenever the logo is used. The first logos are scheduled to appear on June 17, 1993.

As of June 1993, 70 companies had signed on as "partners," accounting for 60 percent of U.S. computer sales, and 80 percent of laser printer sales. Included in this list of 70 companies are large, high profile manufacturers such as IBM, Apple, Hewlett Packard, and Compaq. In his Earth Day 1993 address, President Clinton released an Executive Order that directs the various agencies of the federal government, the largest purchaser of computer equipment in the world, to purchase only desktop computer equipment that meets Energy Star specifications, provided that they are available commercially and meet performance needs. EPA is also encouraging consumers to buy computers with the Energy Star logo through a corporate purchasing program modeled after EPA's Green Lights program. (Johnson, 1993)

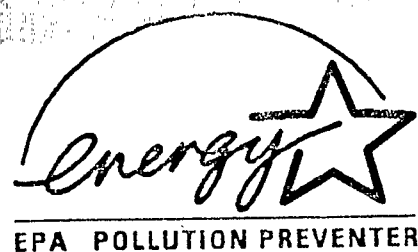
Computer systems currently account for 5 percent of the electricity used by the commercial sector, and this figure may increase to as much as 10 percent by the year 2000. EPA estimates that by the year 2000, the Energy Star program will reduce annual carbon dioxide emissions by 20 million tons, or the equivalent of the emissions of five million cars. Significant reductions of sulfur dioxide (140,000 tons/year) and nitrogen oxides (75,000 tons/year) are also expected. (Hansen, 1993) Since much of the technology used to make computers energy efficient has been readily available in laptop and portable systems for some time, manufacturers expect to convert many of their product lines with virtually no increase in cost or decrease in performance. (Johnson, 1993)

References

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- Johnson, Brian J., 1993. EPA Energy Star Computers program information packet.
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EPA ENERGY STAR COMPUTERS



SUMMARY OF COMPUTER AND MONITOR AGREEMENT

- Voluntary partnership agreement between EPA and Computer Manufacturers

ENERGY STAR COMPUTERS PARTNER COMMITMENTS:

- Introduce personal computer(s) and/or monitor(s) capable of entering a low-power state when the unit is inactive
- A low power state is defined as ≤ 30 Watts for either the computer or the monitor
- Educate customers about the energy savings and pollution prevention potential of turning off existing computers

THE EPA ENERGY STAR™ LOGO:

- The EPA ENERGY STAR™ logo may be used to identify products that qualify
- The ENERGY STAR™ logo makes its debut one year from the launching of the program, on June 17, 1993
- EPA seeks only to promote energy-efficiency and does not endorse any particular company or its products; this will be noted by Partners wherever the logo is used

EPA COMMITMENTS:

- Recognize Partner for its public service in protecting the environment
- Promote public awareness of energy-efficient computers
- Encourage companies to buy products bearing the ENERGY STAR™ logo through its voluntary purchasing programs
- Work with U.S. agencies to encourage Federal procurement of products bearing the ENERGY STAR™ logo, when evaluating approximately equivalent products



EPA ENERGY STAR COMPUTERS



SUMMARY OF PRINTER AGREEMENT

- Voluntary partnership agreement between EPA and Printer Manufacturers

ENERGY STAR PRINTERS PARTNER COMMITMENTS:

- Introduce printers capable of entering a low-power idle state:

Printer Speed (Pages Per Minute)	Default Time to Low-Power State (Minutes)	Max Power in Idle State (Watts)
1 - 7	15	30
8 - 14	30	30
15 and above, & color laser printers.	60	45

- Educate customers about the energy savings and pollution prevention potential of energy efficient printers

THE EPA ENERGY STAR™ LOGO:

- The EPA ENERGY STAR™ logo used to identify products that qualify
- The ENERGY STAR™ logo makes its debut June 17, 1993
- EPA seeks only to promote energy-efficiency and does not endorse any particular company or its products; this fact will be noted by Partners wherever the logo is used

EPA COMMITMENTS:

- Recognize Partner for its public service in protecting the environment
- Promote public awareness of energy-efficient computer equipment
- Encourage companies to buy products bearing the ENERGY STAR™ logo through its voluntary purchasing programs
- Work with U.S. agencies to encourage Federal procurement of printers bearing the ENERGY STAR™ logo when evaluating approximately equivalent products

COUNCIL FOR ECONOMIC PRIORITIES' *SHOPPING FOR A BETTER WORLD*

COUNCIL FOR ECONOMIC PRIORITIES' *SHOPPING FOR A BETTER WORLD*

Introduction

In 1988 the Council for Economic Priorities (CEP) published the first edition of a book titled *Shopping for a Better World*, in which producers of consumer goods and services are ranked on the basis of a wide variety of criteria. In addition to environmental issues (such as the amount of toxic substances that the company releases), companies are judged based on such social issues as the advancement of minorities and women to top level management, the level of investments in South Africa, and donations to charity.

The 1989 edition of the book rates 138 manufacturers of 1,600 consumer products. The book resembles a collection of report cards, rating companies with a three-tiered check (✓), check plus (✓ +), or check minus (✓ -) for each category.

A new edition of *Shopping for a Better World* for teenagers, called *Student Shopping for a Better World*, was published in 1992. In this book, CEP uses a different rating system (A = excellent, C = average, F = failed) and new criteria (listed below) to update their environmental ratings. If a company has become "greener" since the last publication, it will be recognized for improvements in its overall environmental performance.

Structure

The review process at CEP is relatively informal. CEP staff decide on which criteria they feel capable of assessing, which generally includes non-scientific data. With the criteria in place, the Environmental Ratings Researcher examines the companies and awards the ratings.

Process

The Environmental Ratings Researcher uses the list of criteria created by the CEP staff and compares companies within an industry against one another, taking into consideration the size and financial stature of a company. The environmentally oriented criteria that CEP will use for the next edition are as follows:

- toxic release inventory: the amount and nature of pollutants released to the environment
- toxic reductions
- disposal techniques: how they dispose of chemicals and waste
- superfund sites
- hazardous products
- formal environmental policy of the company
- where responsibility lies in the company
- compliance with regulations
- recycled content of packaging

- amount of packaging
- office recycling: what they recycle and how much
- sustainable use of raw materials and waste reduction: what they do to conserve resources
- energy conservation
- donations to environmental organizations
- purchasing practices
- community health issues
- accident record (Jonathan Rose, CEP, 1992)

If a company is on the borderline between ratings once the above criteria are assessed, CEP will look at a company's litigation record and technological improvements.

The Researcher gathers information from a number of different sources: 1) questionnaires filled out by companies; 2) printed material and interviews with company officials; 3) specialized institutions such as EPA, Greenpeace and the Natural Resources Defense Council; and 4) libraries and government agencies.

Public Review Process

Prior to publication, CEP supplies companies with the information that they used to assess its rating and the rating that the company will be given. The company is allowed to respond to its rating, offering more information if it chooses.

Effectiveness

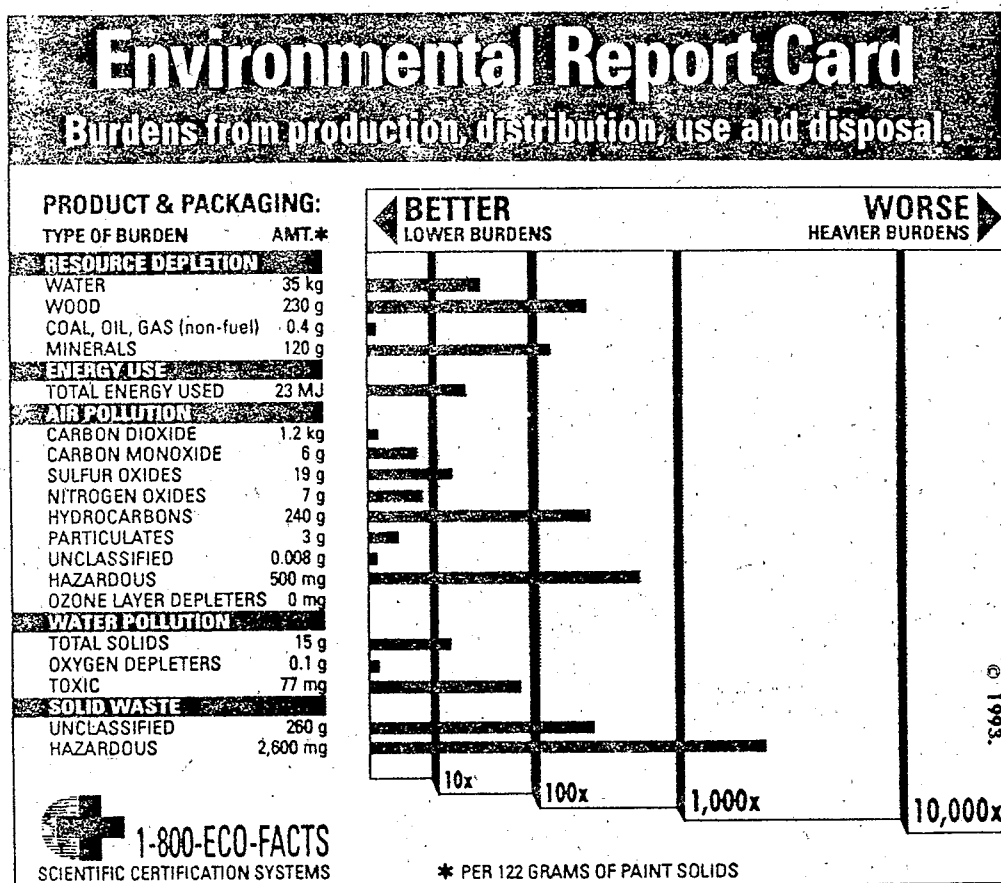
In a 1989 poll of 1,000 buyers of *Shopping for a Better World*, CEP found that 78 percent had switched brands because of ratings in the book, that 64 percent referred to the book "whenever they shopped" and that 97 percent considered the environment "their top or near top priority." Ben & Jerry's has started using *Shopping for a Better World* ratings as a factor in choosing suppliers, while Borden executives "planned to recommend specific improvements" to the company in order to receive high ratings. (CEP, 1989) As of 1991, more than 850,000 copies of *Shopping for a Better World* had been sold.

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Council on Economic Priorities (CEP), 1989. *Shopping for a Better World*, Ballantine Books: New York, 1989.

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SCIENTIFIC CERTIFICATION SYSTEM'S ENVIRONMENTAL REPORT CARD



SCS ENVIRONMENTAL REPORT CARD

The Environmental Report Card approach to environmental labeling involves the categorization and inventory of environmental burdens (such as carbon dioxide emissions or the amount of hazardous solid waste generated) associated with the life-cycle of an industrial system related to a specific consumer product. The report card lists these burdens directly, and also provides a bar graph representation of these burdens on an exponential scale. This scale reflects the potential range of burdens for all consumer products, enabling the reader to compare products not only within the same category, but across other categories as well. In theory, the report card is an impartial instrument with which to present multiple criteria, the idea being that consumers can select products based on criteria of particular concern to them. At this time, only Scientific Certification Systems (formerly Green Cross) is offering a version of this method of environmental labeling, with its LCI-based Environmental Report Card. As of mid-1993, the SCS Report Card appeared on nine products, including trash bags, recycled fabric clothing, and spray paint.

SCS Certification Program

Initiated in 1989 by Scientific Certification Systems, the Green Cross Environmental Certification Program was an independent, not-for-profit certification program, with the stated goal of "verifying the accuracy and significance of environmental claims on products." SCS has recently consolidated all of its certification programs (including Green Cross) under its own name and has applied for 501(c)(3) non-profit tax exempt status, partly in response to criticism over possible conflicts of interest due to the for-profit nature of the parent corporation. SCS also recently announced its alliance with the Good Housekeeping Institute, which will advise SCS on various product issues.

The stated long term program goals for SCS are to 1) support consumers' efforts to optimize their product choices with "coherent, comprehensive environmental information"; 2) provide companies with independent feedback about the environmental ramifications of their products; 3) encourage manufacturers' efforts to meet the highest environmental standards in product design and production; 4) build a consensus on what constitutes a significant environmental claim; and 5) help policy makers to set down effective environmental policy.

SCS's labeling program has evolved into three distinct areas: 1) environmental claim certification (e.g., recycled content, biodegradable) (see Section 2.3); 2) significant multi-attribute claims (e.g., the Forest Conservation Program); and 3) the "Environmental Report Card."

Environmental Report Card

SCS's Environmental Report Card is based on a "life-cycle inventory" (LCI). LCI is the first step of the "life-cycle assessment" (LCA) procedure, which involves a cradle-to-grave evaluation of the environmental burdens (resource depletion, energy consumption, air and water

emissions, and solid wastes) associated with the raw material extraction, manufacture, transportation, use, and disposal of a product. Under SCS's LCI, inputs and outputs under the following categories are quantified for each stage of material extraction, manufacturing, use, and disposal:

- resource depletion
- energy use
- air emissions
- water emissions
- solid waste generation

For each labeled product, the SCS Environmental Report Card lists approximately twenty categories of environmental burdens. According to SCS, these categories have been selected to be consistent with Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act (RCRA) regulations. A numerical value is provided for each burden; these values are derived by studying the life-cycle of the industrial system associated with the product (e.g., kg of carbon dioxide released during manufacture).

The LCI analysis is based on the philosophy that while the ultimate fate or effect of an environmental emission is not clear, it is reasonable to assume that the less emission released, or the less resource used, the better for the environment. Once the LCI has been completed, the results are presented on the Report Card label, which consists of a bar graph, with an entry for each category of environmental burden. Displayed in an exponential scale, the bar graph documents the "environmental burden" of the labeled product by displaying a bar for each of 20-odd different environmental impacts that are measured. The bars run horizontally across the page, with smaller bars indicating "less" environmental burden and longer bars indicating "more" environmental burden. Also included on the label are the numerical values for an impact category, which may range anywhere from zero (e.g., 0 kg of carbon dioxide released) to some highest value as determined by the product which is the most offensive in that particular category.

The Report Card has been referred to as the environmental equivalent of a nutritional label, and is designed to "provide a full disclosure to the public of the known/calculated input and output burdens...associated with a particular product." This provision of information by the Report Card confers upon it an advantage over a standard seal-of-approval environmental certification program, which only considers "a subset of [all] input and output categories" in its evaluation process. (SCS 1992b) SCS selected the report card approach over the seal approach in order to "ensure that environmental trade-offs were not overlooked...and to find a mechanism capable of representing the full spectrum of environmental performance in products." (SCS, 1993) SCS emphasizes that the Report Card simply provides information to the consumer, and neither advocates nor condemns a particular product.

However, the Report Card has been criticized as being overly complex for the average shopper, and its presence may be construed as an endorsement by SCS despite its claims of

neutrality. In addition, many products within one product category must carry the Report Card in order for the consumer to make comparisons among them.

SCS Report Card Certification is a multi-step process, involving identification and quantification of inputs and outputs for every stage of a product's life cycle, site inspections, record audits, emissions sampling and testing, and quarterly monitoring (if certified).

Structure

Approximately a dozen people are working on the Environmental Report Card staff, although SCS is planning to increase this number in the near future. Typically three or four people are involved in a certification evaluation.

A 14-member Scientific Advisory Board, made up of representatives from various scientific and economic disciplines, advises the SCS staff during the evaluation procedure.

Certification Process

As presented by SCS in a 1992 document, the certification process has nine stages, and takes place over the course of a year's production (SCS 1992b). The process is outlined as follows:

Phase I.

Stage I: Define Project

- a. Identify product(s) to be evaluated.
- b. Define system(s) of inputs and outputs.
- c. Define project objectives.
- d. Write proposal.
- e. Identify project manager and client technical teams.

Stage II: Prepare Flow Diagrams

- a. Collect existing flow diagrams/schematics from client.
- b. Prepare flow diagrams for each component of system, including all potential inputs and outputs (see flow diagram).

Stage III: Prepare Inventory Data Sheets

- a. Generate inventory data sheets for each component identified in flow diagrams.
- b. Determine required documentation for initial documentation review (e.g. invoices for material purchases).
- c. Determine which site(s) should be physically inspected.

Stage IV: Site Inspections (2-3 visits/site)

- a. Review inventory sheets.
- b. Assist in completion of inventory sheets where additional data are needed.
- c. Examine technical processes to ensure full consideration of factors.
- d. Confirm flow diagrams and make necessary changes.
- e. Conduct preliminary review of relevant documentation, including discussions with client technical team.

Stage V: Data Management

- a. Prepare data input sheets and input data - Reduction of Raw Data.
- b. Conduct data quality review.
- c. Perform necessary calculations and revisions.

Stage VI: Presentation of Findings to Client

- a. Submit detailed LCI report.
- b. Review report with client.

Phase II.

Stage VII: Final Auditing and Testing

- a. Full audit of records, invoices, and support documentation.
- b. Sampling and testing to confirm emissions data.
- c. Final inspection.
- d. Development of Quarterly Update Certification Plan.

Stage VIII: Peer Review

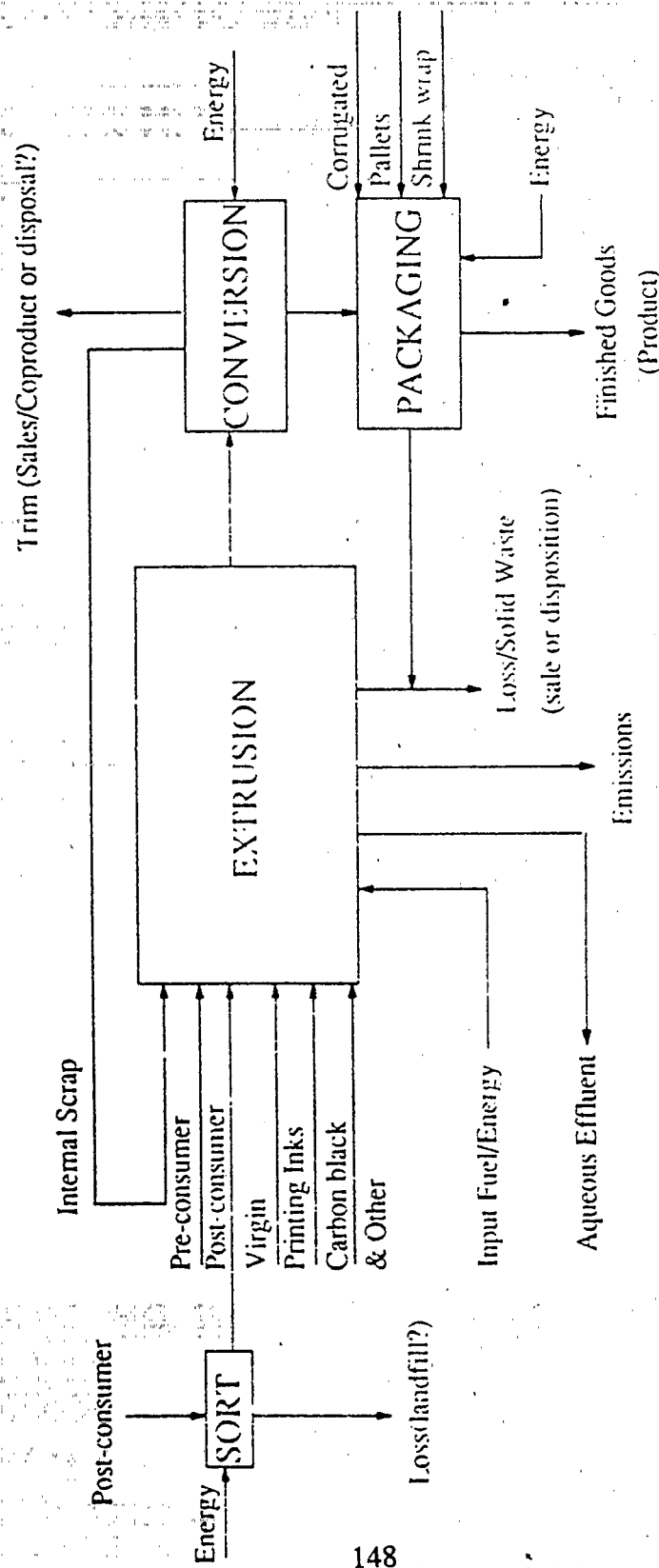
Stage IX: Certification

- a. Issuance of full report, with executive summary describing data quality, and corresponding Environmental Report Card. Before the report or the Report Card may be released to the public, the applicant must satisfy all federal and state environmental regulations. Companies are free to publish their Report Cards, provided that the more in-depth study reports are made available upon request to the public.

Stage X: Monitoring

- a. Once a Report Card has been published, SCS monitors company performance on an annual basis, with recycled content monitored quarterly. The monitoring plan includes

EXAMPLE (1) LDPE Bag Process Partially Separated Hypothetical Flowsheet



*Provide transportation mode (truck, rail, etc.) and distances for all inputs and outputs. Provide sources for inputs.
Processes within this flowsheet can be further separated or expanded, or flowsheet could be aggregated.*

such components as review of emissions reports, reverification of material sourcing, random resampling and testing, examination of plant records, etc. (SCS 1992b, 1993)

The client pays for testing fees but does not pay any licensing or royalty fees.

References

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PESTICIDE LABELING UNDER THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

PESTICIDE LABELING UNDER THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), first enacted in 1947 and subsequently amended, requires the registration of pesticides and pesticide producers with the U.S. Environmental Protection Agency. Pesticides, as defined by FIFRA, are substances designed to prevent, destroy, repel, or mitigate any pests, or to regulate, defoliate, or desiccate plants.

Each of the 600-odd pesticide active ingredients in use today must pass a set of health and safety standards in order to be approved for registration, or in the case of chemicals registered before 1984, a reregistration. (Tweedy, et al., 1991) As part of registration or reregistration, the labelling of each product is reviewed and approved by the Agency.

Pesticide Labeling

FIFRA requires labels to appear on the containers of every pesticide product sold in the U.S., and imposes standards and restrictions regarding the wording and format (40 CFR §156.10) As outlined in the Code of Federal Regulations (CFR), a pesticide label must clearly and prominently display the following information:

- a) The name, brand, or trademark under which the product is sold;
- b) The name and address of the producer, registrant, or person for whom produced;
- c) The net contents (weight or measure);
- d) The product registration number;
- e) The producing establishment number;
- f) An ingredient statement;
- g) Warnings and precautionary statements;
- h) The directions for use; and
- i) The use classification(s) (restricted use).

All required label text must be set in 6 point type or larger, and must appear in English. The Agency, however, may require additional text in other languages if it is considered necessary in protecting the public health.

The Office of Pesticides Programs (OPP) at EPA reviews each pesticide label individually to ensure appropriateness and accuracy. (Frane, 1993) The particular environmental or health effects of a pesticide may prompt EPA to require additional warnings or messages to be included on its label (e.g., groundwater advisory statements, chronic hazard warnings).

The various components of the label are discussed in more detail below. Label requirements as described below are taken from the 40 CFR §156.10. The regulations set only broad guidance on label content. In practice, the Agency has wide latitude to require, or accept,

statements that deviate from the regulations, and many statements that are accepted reflect variations based on product type and use.

A. Name, brand, or trademark: The name that appears on the label must be registered with the EPA, and not be false or misleading.

B. Name and address of the producer, registrant, or person for whom produced: If the registrant's name that appears on the label is not the producer of the pesticide, it must be qualified by appropriate wording such as "*Packed for ****," "*Distributed by ****," etc.

C. Net contents (weight or measure): The net weight or measure, exclusive of wrapping materials, must be stated as an average content unless explicitly stated as a minimum quantity.

D. Product registration number: The EPA registration number (often abbreviated to "EPA Reg. No.") assigned to the pesticide product at the time of registration must appear on the label.

E. Producing establishment number: The producing establishment number, preceded by the phrase "EPA Est.," must appear on the label or on the immediate container.

F. Ingredients statement: The ingredients statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the label cannot be read, then the ingredient statement must also appear on that container or wrapper.

The label of each pesticide product must bear a statement that contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients. Each ingredient must be referred to by its accepted common name, if there is one. If no common name has been established, then the chemical name must be used. Trademarked names not accepted as common names are not allowed.

Pesticide products that contain one or more chemical components that change significantly over time must also include a statement that reads: "*Not for sale after [date].*"

G. Warning and precautionary statements

Required warning and precautionary statements regarding toxicological hazards to humans fall into two groups: those required on the front panel and those that may appear elsewhere. The child hazard warning and the appropriate human hazard signal word (see below) must appear on the front panel of a pesticide label. Other warnings and messages, including the statement of practical treatment (except in the cases of extremely toxic products), health and environmental precautionary statements, and physical and chemical hazard statements, may appear elsewhere on the label.

1. Child hazard warning

Except for those products deemed safe for use on children or infants, or where the possibility of contact with children is exceedingly small, all pesticide product labels must bear on the front panel the warning "*Keep Out of Reach of Children.*"

2. Toxicity Categories

The text required on the front panel of the label is determined by the Toxicity Category of the pesticide product. A pesticide is assigned a Toxicity Category based on its highest hazard potential in any of the following indicators listed in Table 1:

Table 1: Toxicity Category Definition				
Hazard Indicators	Toxicity Categories			
	I	II	III	IV
Oral LD ₅₀	up to and including 50 mg/kg	from 50 thru 500 mg/kg	from 500 thru 5000 mg/kg	greater than 5000 mg/kg
Inhalation LC ₅₀	up to and including 0.2 mg/liter	from 0.2 thru 2 mg/liter	from 2 thru 20 mg/liter	greater than 20 mg/liter
Dermal LD ₅₀	up to and including 200 mg/kg	from 200 thru 2000 mg/kg	from 2000 thru 20,000 mg/kg	greater than 20,000 mg/kg
Eye Effects	corrosive; corneal opacity not reversible within 7 days	corneal opacity reversible within 7 days; irritation for 7 days	no corneal opacity; irritation reversible within 7 days	no irritation
Skin Effects	corrosive	severe irritation at 72 hours	moderate irritation at 72 hours	mild or slight irritation at 72 hours
NOTES: LD ₅₀ is the lethal dose at which 50% of the animals in lab testing die. LD ₅₀ is measured in mg pesticide per kg bodyweight. LC ₅₀ is the lethal concentration at which 50% of the animals in lab testing die. LC ₅₀ is measured in mg pesticide per liter of air. SOURCE: <i>Consumers' Research</i> , July 1992; 40 CFR §156.10				

3. Human Hazard Signal Words

Pesticide labels must bear specific signal words, depending on the pesticide's assigned Toxicity Category.

A pesticide that meets the criteria of Toxicity Category I must bear the signal word "*Danger*" on the front panel of its label. In addition, if the product was assigned to Toxicity Category I based on its oral, inhalation, or dermal toxicity, the label must also bear the word "*Poison*" in red on a background of distinctly contrasting color and the skull and crossbones symbol must appear in close proximity to the word "*Poison*."

A pesticide meeting the criteria of Toxicity Category II must bear the signal word "*Warning*" on the front panel of its label.

A pesticide meeting the criteria of either Toxicity Category III or IV must bear the signal word "*Caution*" on the front panel of its label.

4. Statements of Practical Treatment (First Aid or Other)

For pesticides in Toxicity Category I, a statement of practical treatment (i.e. first aid) is normally required on the front panel, although in practice reasonable variations are permitted by EPA. For other pesticides, statements of practical treatment are not required on the front panel, but must appear elsewhere on the label.

5. Other Required Warnings and Precautionary Statements

Other appropriate warnings and precautionary statements must appear on the label under the general heading of "Precautionary Statements," and under the subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard," and "Physical or Chemical Hazard."

Typical precautionary statements indicating hazard to humans and domestic animals are listed in the table below, and are arranged by Toxicity Category. Other statements are also used — there is considerable variability in hazard statements.

If a pesticide is found to be potentially hazardous to non-target organisms (excluding humans and domestic animals), the text on its label must include precautionary statements describing the nature of the hazards and the appropriate precautions to avoid problems. For example, for a pesticide intended for outdoor use, which contains an agent with an acute oral LD₅₀ of 100 or less, the label must read, "*This Pesticide is Toxic to Wildlife.*" Other statements address toxicity to birds, fish, and aquatic organisms.

Finally, for chemical or physical hazards, the required precautionary statements are listed below in Table 3

H. Directions for use

Excepting pesticides that are not destined for consumer use, all pesticide labels must have printed on them detailed use instructions or references to accompanying instruction leaflets.

Table 2. Hazard to Human and Domestic Animal Precautionary Statements		
Toxicity Category	Precautionary statement by Toxicity Category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed thru skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, or skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required].
II	May be fatal if swallowed [inhaled or absorbed thru the skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Appropriate first aid statements required].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required].
III	Harmful if swallowed [inhaled or absorbed thru the skin]. Avoid breathing vapor [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statements required].	Avoid contact with skin, eyes, or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required].	[No precautionary statements required].
SOURCE: 40 CFR §156.10.		

Table 3. Physical or chemical hazard precautionary statements	
Flash Point	Required Text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20°F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
Flash point above 20°F and not over 80°F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20°F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20°F and not over 80°F	Flammable. Keep away from heat and open flame.
Above 80°F and not over 150°F	Do not use or store near heat or open flame.
SOURCE: 40 CFR §156.10.	

The directions must appear under the heading "*Directions for use*," and include the following:

- a) the statement of use classification (see section I, below);
- b) the statement "*It is a violation of Federal law to use this product in a manner inconsistent with its labeling;*"
- c) the sites of application (e.g., crops, lawns, etc.), or objects to be treated;
- d) the target pests;
- e) the dosage rate;
- f) the method of application;
- g) the proper frequency and timing of application;
- h) the reentry statement (if needed), which specifies the length of time that must pass before people can reenter a treated area;
- i) the disposal directions; and
- j) any use limitations or restrictions required to prevent unreasonable adverse effects.

I. Use classification

Every registered pesticide has one or more EPA-designated uses. Each of these uses is evaluated for hazard potential and may be classified for restricted use if necessary to protect human health or the environment.

1. General Use Classification

Products designated for general use must be labeled with the words "*General Classification*," which must appear directly below the heading "*Directions for Use*."

2. Restricted Use Classification

Products designated for restricted use only must include the words "*Restricted Use Pesticide*" on the front panels of their labels. A statement describing the nature of the restrictions and the reason for the restriction must appear directly below the above statement. If the product is to be sold to Certified Applicators only, the following statement must also appear: "For retail sale and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." For each specific pesticide, other additional restriction statements may be required by EPA.

Enforcement

According to FIFRA Sec. 2(q) and 12 (Federal Environmental Laws, 1988), failure on the part of the pesticide producer or registrant to comply with labeling requirements may be considered "misbranding" of the pesticide. Sales or distribution of a misbranded pesticide

constitutes an unlawful act. The Environmental Protection Agency may then cancel the registration, or bring criminal and/or civil charges against the registrant or producer of the pesticide.

References

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PRODUCT LABELING UNDER THE TOXIC SUBSTANCES CONTROL ACT (TSCA)

PRODUCT LABELING UNDER THE TOXIC SUBSTANCES CONTROL ACT (TSCA)

The Toxic Substances Control Act (TSCA) was enacted by Congress in the fall of 1976 to identify and control toxic chemical hazards to human health and the environment. "To prevent unreasonable risks," the Act gives EPA the authority to "select from a broad range of control actions under TSCA, from requiring hazard-warning labels to outright bans on the manufacture or use of especially hazardous chemicals." (EPA, 1987)

Section 6(a)3 of TSCA allows the Administrator to apply:

a requirement that such substance or mixture or any article containing such substance or mixture be marked with or accompanied by clear and adequate warnings and instructions with respect to its use, distribution in commerce, or disposal or with respect to any combination of such activities. The form and content of such warnings and instructions shall be prescribed by the Administrator. (PL 94-469)

The law does not specify the form or content of the warnings, nor has EPA promulgated any regulations establishing a single consistent method of labeling. To date, labels have been required or proposed for chemicals and products on a case by case basis. To date, regulated chemicals and products subject to TSCA labeling include PCBs, asbestos, hexavalent chromium and acrylamide grout.

Examples of TSCA Labels

Polychlorinated biphenyls (PCBs) were regulated under TSCA in 1978. The labeling section of this rule required one of two labels to be used, a "Large PCB Mark" or a "Small PCB Mark." The large label states, "*Caution: Contains PCBs, a toxic environmental contaminant requiring special handling and disposal in accordance with U.S. EPA regulations 40 CFR 761. For disposal information contact the nearest EPA office. In case of accident or spill, call toll free the U.S. Coast Guard National Response Center.*" The small label states, "*Caution: Contains PCBs. For proper disposal contact U.S. EPA.*"

The labeling of asbestos was required in 1989 as part of regulatory actions which included a ban on "almost all products" containing asbestos. Consumer products containing asbestos include clutch parts and brake shoes for cars and trucks, pipeline wrap and vinyl asbestos floor tile. The labeling aspect of the rule is intended "to facilitate compliance with and enforcement of the rule." The required label stated, "*Notice: This product contains asbestos. The EPA has banned the distribution in U.S. commerce of this product under section 6 of TSCA (15 U.S.C. 2605) as of [date, ranging from August 1990 to August 1995]. Distribution of this product in commerce after this date and intentionally removing or tampering with this label are violations of Federal law.*" (54 FR 29460)

Hexavalent chromium-based water treatment chemicals used in HVAC and refrigeration systems, were regulated under TSCA in 1990. (55 FR 221) The warning label reads, "Warning: This product contains hexavalent chromium. Inhalation of hexavalent chromium air emissions increases the risk of lung cancer. Federal law prohibits use of this substance in comfort cooling towers, which are towers that are open water recirculation devices and that are dedicated exclusively to, and are an integral part of, heating, ventilation and air conditioning or refrigeration systems."

EPA has proposed a ban on acrylamide and N-methylolacrylamide (NMA) grouts, which are used to make repairs to leaking cement structures such as sewers and manholes, but also dams and basins, and to stop water flow in mines, reservoirs and hazardous waste sites. The ban would prohibit all use of acrylamide grout and would allow NMA to be used only for sewer repair for three years, subsequently banning it. EPA proposed labeling of containers of such grout 15 days after the effective date of the rule. "EPA believes there is a strong need for labeling to ensure compliance with the prohibitions on the manufacture, importation, distribution and use of acrylamide and NMA grouts. Labeling is a necessary mechanism to direct users toward compliance with the prohibitions on uses of acrylamide and NMA grouts." (56 FR 49871) No wording for the label warning has been suggested.

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CALIFORNIA PROPOSITION 65

WARNING: THIS PRODUCT CONTAINS
DETECTABLE AMOUNTS OF CHEMICALS KNOWN TO
THE STATE OF CALIFORNIA TO CAUSE CANCER
AND/OR REPRODUCTIVE TOXICITY.

CALIFORNIA PROPOSITION 65

California's Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986, is an initiative statute that was placed on the ballot by citizen petition due to concern over inadequate governmental public health regulations. Although the law was opposed by industry and agriculture groups as well as almost every major newspaper in California, Proposition 65 was approved by the California electorate by nearly a two to one margin. The purpose of the law is to enhance community right-to-know, protect drinking water supplies, and reduce toxics release. (Kizer, 1988)

Proposition 65 mandates that chemicals found to cause cancer, or developmental or reproductive toxicity, be listed by the governor. Warnings must be provided by businesses that knowingly and intentionally expose individuals to these chemicals at significant levels. In addition, discharge of these chemicals into drinking water supplies must stop within twenty months of being listed, except in those cases where the discharger can demonstrate that the discharge is insignificant. The governor's list currently includes over 500 chemicals (391 carcinogens and 150 reproductive toxins) (Cal/EPA 1993). The Act is not applicable to government agencies, drinking water utilities, and businesses employing fewer than 10 persons. (Cal/EPA, 1992)

Implementation of the Act for many products and industries has been subject to extensive industry attention. The food, drug, and cosmetic industries lobbied to receive a temporary exemption from the law on the grounds that they are already regulated by the federal Food and Drug Administration (FDA). In addition, these same industry groups tried to avoid the warning labels by instead setting up a toll free number for product information, which was ruled unacceptable by the courts. Proposition 65 warning labels have been implemented in other industries with less opposition, and has added significantly to the scope of warnings on hazardous products.

Proposition 65 has had some measure of success. It has resulted, for instance, in greater public awareness about the hazards of alcoholic beverage consumption during pregnancy, and of tobacco smoke exposure. While data are not currently available on actions taken by the regulated community to remove themselves from the purview of Proposition 65, there is evidence that manufacturers have reformulated products to eliminate or reduce exposures to listed chemicals to avoid having to provide warnings. Proposition 65's effectiveness as a market based incentive for the reformulation of products has led to the removal of certain solvents from correction fluids, as well as the removal of lead from certain ceramic products and from foil wraps on wine bottles. (Cal/EPA, 1993) In addition, Proposition 65 has resulted in process modification, chemical substitution or use of pollution control devices to eliminate or reduce emissions of listed chemicals that would have required community warnings.

Structure

California EPA's *Office of Environmental Health Hazard Assessment* (OEHHA) is designated as the lead agency for Proposition 65 implementation. OEHHA is "directed to implement the Act in a manner that is fair, predictable, and based on a firm foundation of science." (Cal/EPA 1992) OEHHA compiles the list of carcinogens and reproductive toxins, prepares dose-response assessments on listed chemicals, promulgates regulations and provides assistance to the regulated community in complying with the law. The authority to enforce Proposition 65 is vested in the Attorney General, local district attorneys, and certain city attorneys. Private citizens may also take action to enforce Proposition 65, following certain conditions (see "Enforcement"). (Cal/EPA, 1993)

The Governor's *Scientific Advisory Panel*, composed of 12 State Scientists from the Dept. of Health Services, the Dept. of Pesticide Regulation, the Dept. of Toxic Substances Control, and the OEHHA, represent the state's qualified experts and perform a limited role in addressing the listing of chemicals. (Cal/EPA, 1993b)

Chemical Listing

The lead agency compiles and publishes the list of chemicals known to the state to cause cancer or developmental/reproductive toxicity, and updates it at least annually. A chemical is listed:

- 1) if, in the opinion of the "state's qualified experts," the chemical has been clearly shown to cause cancer or reproductive toxicity;
- 2) if an "authoritative" body designated by the "state's qualified experts" has formally identified the chemical as a carcinogen or a developmental/reproductive toxicant; or
- 3) if any state and/or federal agency has formally required the chemical to be labeled or identified as a carcinogen or a developmental/reproductive toxicant.

A panel of state scientists (the Proposition 65 Scientific Advisory Panel) currently represents the "state's qualified experts." Authoritative bodies include the U.S. EPA, the FDA, the International Agency for Research on Cancer, the National Institute for Occupational Safety and Health (NIOSH), and the National Toxicology Program (Cal/EPA, 1992).

Business Requirements

1. Twelve months after a chemical is listed, businesses must not knowingly and intentionally expose any individual to a significant risk level of the chemical without first providing a "clear and reasonable warning," unless the business can demonstrate that the exposure:

- does not exceed 1/1000 of the "no observable effect level" (NOEL) for reproductive toxins;
- poses "no significant risk" of cancer — i.e., results in a cancer risk of less than one excess case of cancer per 100,000 individuals exposed over a 70-year lifetime for carcinogens.

Examples of warnings that have been issued as a result of Proposition 65 include: labels on cigars, pipe tobacco, and other tobacco products not covered by the federal cigarette labeling requirements, point-of-purchase signs warning about risks of alcoholic beverage consumptions during pregnancy, signs warning about the presence of environmental tobacco smoke, and newspaper notices about emissions from facilities in the community. (Cal/EPA, 1993)

2. Twenty months after the chemical is listed, businesses must not knowingly discharge the chemical in "significant amounts" to the drinking water supply. "Significant amount" refers to any detectable amount, unless the resulting exposure meets the same criteria for exemptions from the warning requirement.

Enforcement

Proposition 65 utilizes an unusual means of enforcement called the "bounty hunter" incentive, which allows private citizens to initiate proceedings against potential violators and reap monetary benefits from successful actions. Sixty days after notifying public authorities (i.e., the Attorney General, the appropriate district attorney or city attorney) of a potential violation, any individual or group may sue the offending business if the authorities are not "diligently prosecuting" the matter (Kizer, 1988). If successful, the individual or group bringing suit receives 25 percent of the penalty fines, which may amount to a maximum of \$2,500/day for each violation. The plaintiff filing suit must first show that the alleged violator generated a knowing discharge or exposure. It is then the responsibility of the defendant to prove that the exposures and discharges were within legal limits (Cal/EPA, 1992).

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THE VERMONT HOUSEHOLD HAZARDOUS PRODUCTS SHELF LABELING PROGRAM

**CONSUMERS: MANY ITEMS IN THIS SECTION ARE
*HOUSEHOLD HAZARDOUS PRODUCTS***

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about hazardous
products and
toxics use
reduction is
available at the
register or service
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dispose of
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VERMONT HOUSEHOLD HAZARDOUS PRODUCT SHELF LABELING PROGRAM

Introduction

The Vermont Household Hazardous Product Shelf Labeling Program was implemented in April 1991 by the Solid Waste Division of the Agency of Natural Resources. The program's purpose is to promote toxic use reduction and pollution prevention by educating consumers about the dangers of household hazardous products, and encouraging them to consider alternatives. The mandatory shelf labeling program was set up by a 1990 state law requiring all retailers stocking household products containing hazardous constituents to identify the products with shelf labels. By prompting consumers to avoid purchasing such products, the program's goal is to send a signal to manufacturers to produce less hazardous products. This in turn would result in a cleaner environment and less costly waste disposal bills for the state. Products covered by the program are organized under the following four categories: cleaning products, auto and machine maintenance products, hobby and repair products, and general/miscellaneous (which includes shoe polish, non-personal care aerosols, butane lighters, etc.). Personal care products and food are excluded.

Retailers were initially concerned that the program would result in a negative consumer perception of their stores because they sell hazardous products. Instead, consumers have been quite supportive of the participating stores, and have expressed their appreciation for the additional product information. Retailers also worried about possible loss of sales of the labeled products. The state responded by modifying the program to label products deemed less toxic or nontoxic with an "exempt" label, so that retailers could offer officially-sanctioned alternatives to the labeled products. To date, "approximately 58 percent of Vermont retailers have attempted to comply with the program intent." (Vermont 1992)

After nine months of implementation, the program staff determined that retailer education and implementation was good, but that consumer education needed more work. Since that time, the shelf label has been augmented with a larger (3"x5") "shelf talker" card which increases label visibility and decreases the implementation burden on the retailer.

Structure

Vermont's program was set up in a public process with input from the broad-based Governor's *Technical Advisory Committee* on Solid Waste and other interested parties. The Technical Advisory Committee included representatives from retailers as well as environmental organizations. The program was implemented and is maintained by the *Solid Waste Division* of the Agency of Natural Resources. The Commissioner of Agriculture has established a companion program for pesticides and commercial fertilizers.

Categories of products are added or removed from the list through rulemaking by Vermont legislators. At the time of this writing, program staff anticipated the addition of many new products in the near future.

Program Elements

Labeling:

The labeling program is mandatory. All retailers of products specified in the law were required to have the labels or "shelf talker" cards on shelves or in the immediate vicinity of the identified products within 9 months of the establishment of the program. Approximately 3,500 Vermont stores are subject to the law. There is one state-approved label for retail use with respect to the hazardous products, a yellow sticker with the text "REDUCE TOXICS USE. These products contain HAZARDOUS INGREDIENTS." printed on it.

In addition, there is a green exemption label which may be affixed to shelves displaying products that are covered by the program but have been exempt from the yellow hazardous ingredients sticker. To qualify for an exemption label, a product covered by the program must be free of 24 ingredients listed in the Vermont Community Right-to-Know list of hazardous chemicals. The Agency reviews individual product applications for the exemption sticker, and makes decisions based on data on the product's Material Safety Data Sheet (MSDS).

Retailer Information:

Retailers are provided with information about household hazardous products and alternatives and logistical information on how to label shelves in the "Retailer Information Guide." Also, a full time "retailer educator" was hired for nine months to assist retailers in implementing the program.

Consumer Education:

In addition to the labels and "shelf talker" cards, the Agency has developed informational posters to be displayed close to shelves where hazardous products are sold, and brochures that contain background information on products, potential hazards, safe disposal, and use of alternative nontoxic products. The Agency also has plans to launch a media campaign and to advertise offsite at recycling depots, schools, and businesses.

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EPA'S OZONE DEPLETING SUBSTANCE (ODS) WARNING LABEL

EPA'S OZONE DEPLETING SUBSTANCE (ODS) WARNING LABEL

Section 611 of Title VI of the Clean Air Act, as amended in 1990, requires "labeling of products that contain or were manufactured with class I or II [ozone depleting] substances" by May 15, 1993. Class I substances are chlorofluorocarbons (CFCs), halons, carbon tetrachloride and 1,1,1-trichloroethane (methyl chloroform), while class II chemicals are hydrochlorofluorocarbons (HCFCs). The text of the label reads: "Warning: Contains (or, 'Manufactured with') *name of substance*, a substance which harms public health and environment by destroying ozone in the upper atmosphere."

The final rule implementing section 611 was promulgated by EPA on February 11, 1993. The rule prohibits the sale of "any container containing class I and class II substances, product containing class I substances and product manufactured with class I substances, unless it bears a warning statement indicating that the product contains or is manufactured with ozone-depleting substances." "Any products containing, or manufactured with class II substances" will be required to be labeled "if the Administrator determines that safe alternatives are available." After January 1, 2015, all products containing or manufactured with class I or class II substances must be labeled. (58 FR 8136)

"Products manufactured with Class I substances can be temporarily exempted from the labeling requirements if EPA determines that there are no substitute products or manufacturing processes that (a) do not rely on the use of the Class I substance, (b) reduce the overall risk to human health and the environment, and (c) are currently or potentially unavailable. However, all products must be labeled by 2015." (Labeling Subcommittee, 1991b)

Although a symbol featuring a globe within an octagon (a stop sign), was considered in the rule proposal, the final rule requires only the text of the warning above. EPA believed that "this symbol would substantially increase consumer understanding and recognition of the required warning and thus heighten the effectiveness of the label." (proposed rule) However, they were also concerned that the cost of changing product labels, "would outweigh the benefits of using the label." (58 FR 8136)

Section 611 required that the warning be "clearly legible and conspicuous," while EPA proposed that it should appear on the "principle display panel" (PDP), the place on a product or package "where the consumer is likely to look for product information." After receiving comments on the proposal, EPA decided that "In view of the broad diversity of products potentially affected by the labeling requirements... manufacturers will need some latitude as to where to place the labels." (58 FR 8136) Therefore, the final regulation reverts to the language of the CAA requiring the warning to be "clearly legible and conspicuous" wherever it is presented. Other labeling options such as hang tags, stickers and supplemental printed materials are also acceptable.

Effects of Phaseout

At the time of the Clean Air Act amendments in 1990, the U.S. was committed to a phaseout of class I substances by the year 2000 (two years later for methyl chloroform), in concordance with the Montreal Protocol on Substances that Deplete the Ozone Layer. In a November 1992 meeting in Copenhagen, the phaseout schedule for class I substances was accelerated to January 1996 (two years *sooner* for halons). Thus, the ODS warning label will be in effect for fewer than three years before the phaseout is completed. "As a result, EPA has streamlined some of the proposed requirements" for labeling.

"The recent decision of the Protocol Parties to significantly accelerate the phaseout of the listed ozone-depleting substances reduces the importance of the labeling program." When the phaseout was scheduled for 2000, "the labeling requirements provided an incentive for manufacturers to move away from their use of such substances before 2000 in order to avoid the negative market reaction. With the acceleration of the phaseout,... requiring products to be labeled is unlikely to significantly add to manufacturers' incentive to switch to alternative substances." (58 FR 8136)

Previous ODS Labeling

In 1977, "The FDA and the CPSC required marketers and importers of self-pressurized medical and consumer products that use a CFC propellant to label their products with a warning that such products may harm public health and the environment by reducing ozone in the upper atmosphere."²⁰ Soon afterwards, CFC was banned as an aerosol propellant for all but "essential applications," thus making the warning label irrelevant.

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²⁰ See the *Federal Register* April 29, 1977, 42 FR 22018, and August 24, 1977, 42 FR 42780.

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THE ENERGY GUIDE: HOUSEHOLD APPLIANCE ENERGY EFFICIENCY LABELING

ENERGYGUIDE

Models with the most efficient
energy rating number use less
energy and cost less to operate.

Models with 7 800 to
8 299 BTU's cool
about the same space.

Least efficient
model
5.7

9.6

Most efficient
model
9.8

THIS MODEL ▼▼

This energy rating is based on U.S. Government standard tests.

How much will this model cost you to run yearly?

Yearly hours of use	250	750	1000	2000	3000
Estimated yearly \$ cost shown below					
Cost per kilowatt hour	2¢ \$4	\$13	\$17	\$33	\$50
	4¢ \$8	\$25	\$33	\$67	\$100
	6¢ \$13	\$38	\$50	\$100	\$150
	8¢ \$17	\$50	\$67	\$134	\$200
	10¢ \$21	\$63	\$84	\$167	\$251
	12¢ \$25	\$75	\$100	\$200	\$301

Ask your salesperson or local utility for the energy rate (cost per kilowatt hour) in your area. Your cost will vary depending on your local energy rate and how you use the product.

Important Removal of this label before consumer purchase is a violation of federal law (42 U.S.C. 6302).

Part No. 522447-12

THE ENERGY GUIDE: HOUSEHOLD APPLIANCE ENERGY EFFICIENCY LABELING

In December 1975, Congress passed the Energy Policy and Conservation Act (EPCA), which requires that Energy Guide labels be placed on certain new home appliances. These home appliances include: refrigerators, refrigerator-freezers, freezers, water heaters, clothes washers, dishwashers, furnaces, room air conditioners, central air conditioners and heat pumps. These appliances are covered under EPCA because their energy costs can vary greatly, depending on their construction and design. EPA also requested standards and labeling for humidifiers and dehumidifiers, clothes dryers, direct heating equipment, kitchen ranges and ovens, and television sets, but FTC did not include them in the labeling program because there were insufficient differences in energy efficiency.

The National Appliance Energy Conservation Act (NAECA) of 1987 amended EPCA by, among other things, establishing minimum efficiency standards for all EPCA products. National Appliance Energy Conservation amendments of 1988 added fluorescent lamp ballasts. The Energy Policy Act of 1992 added general service fluorescent lamps and incandescent reflector lamps, showerheads, faucets, water closets, and urinals.

Under the EPCA, the Federal Trade Commission (FTC) was given responsibility for establishing the format of appliance labels, while the Department of Energy (then the Federal Energy Administration) was given responsibility for promulgating standardized test procedures, setting minimum energy efficiency standards and conducting a consumer education program to complement the labeling program. (McNeill & Wilkie, 1979; U.S. DOE, 1980) For most of the appliance categories, FTC required that the energy labels should disclose the average annual energy use for the appliance in dollars and a comparison with similar models. For heat pumps, air conditioners and furnaces, where variations in climate make a national average meaningless, an energy rating figure is used instead. The design of the labels was announced in 1979.

Although the labels vary somewhat for different types of appliances, they all contain specific information on energy efficiency and costs (see title page for figure). The text of each label includes:

- the manufacturer, model number, type of appliance, and capacity, all listed at the top of the label;
- a large number in the center of the label which is either the estimated yearly cost to operate the appliance, or an energy efficiency rating (EER). The annual operating cost is based on the national average electric rate (\$/kwh). Because this average rate may change over time, labels printed at different times may use different standard energy prices. For room air conditioners, furnaces, central air conditioners and heat pumps, the large number refers to the Energy Efficiency Rating (EER). This number tells the consumer the amount of cooling or heating the appliance provides for the amount of electricity that it consumes. The higher the EER, the more efficient the appliance;

- the estimated yearly cost to operate or the efficiency rating of the most and least efficient models within a category. The label displays how the appliance compares with other similarly sized models in energy efficiency by placing it on a line scale between the most and least efficient models at the endpoints;

- a table showing the estimated yearly cost to operate the appliance for varying electric rates (\$/kwh), and varying usage habits. This allows the consumer to calculate likely costs of running the appliance in different parts of the country, where energy rates may differ substantially from the national average. (*Consumers' Research*, 1988; EPA, 1989)

There have been a number of studies to measure the impact that the Energy Guide labels have had on consumers and energy efficiency. (EPA, 1989) While the results of these studies vary, the most typical conclusion was that of a study performed for the Bonneville Power Administration. (Bonneville Power Administration, 1985) It concluded that the Energy Guide labels may help raise consumer awareness of energy efficiency issues, but they do not necessarily change consumer purchase behavior. Respondents also complained that the labels were hard to read and interpret, a problem borne out by other studies. (California Energy Commission, 1988) FTC is currently conducting a review of the content and format of the labels, which is expected to be completed by October 1993. (GAO, 1993)

Other criticisms of the appliance labeling program have been made since its inception. For example, operating costs for an appliance are computed based on the current national average cost of electricity at the time of testing. Since that model may be on the market for a number of years with the same label, and the price of energy may fluctuate, the label becomes less accurate. And since operating costs of new models are also computed for their own year of testing, they may be computed at different rates than models already on the market.

FTC has proposed a number of changes to overcome shortcomings in the program. One proposal is to change the visual format of the label to a bar chart or a vertical line instead of a horizontal line. Another is to change the large central number on the label from a dollar amount to either an "energy factor" (similar to the EER) or a specific unit of energy use, such as kilowatt hours per year of electricity or therms of natural gas. Dollar amounts could be computed using a "cost grid" that gives operating costs for different energy rates and amounts of use. This would avoid the problems presented by changes in the cost of electricity by region and over time. The FTC also proposes to modify the explanatory language on the labels and to conduct a public education program, the first such program since one conducted by the Department of Energy in 1980.

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EPA FUEL ECONOMY INFORMATION PROGRAM

Sample Fuel Economy Label (Attached to New Vehicle Window)

This is the average
estimate for city driving

Use these two estimates
to compare to other models

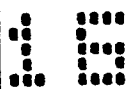
This is the average
estimate for highway driving

Compare this vehicle to others

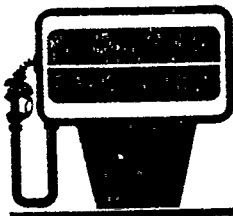
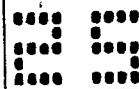
by using the FREE GAS MILEAGE GUIDE available

in the dealer showroom

CITY MPG



HIGHWAY MPG



These numbers
represent a range
of fuel economy
that most drivers
achieve with this
particular model

Actual Mileage will vary with
options, driving conditions,
driving habits and vehicle's
condition. Results reported to
EPA indicate that the majority
of vehicles with these estimates
will achieve between
13 and 18 mpg in the city,
and between
21 and 28 mpg on the highway

1993 CANARY 2.8 LITER
V6 ENGINE 2 BBL CARB
MAN 4 SPD TRANS CATALYST,
FEEDBACK FUEL

Estimated Annual Fuel Cost:
\$942

For Comparison Shopping,
all vehicles classified as
COMPACT
have been issued mileage ratings
ranging from **12 to 37 mpg city**
and **20 to 40 mpg highway**

These numbers
represent the
range of fuel
economy for
other models of
this size class

This fuel cost is based on
15,000 mi/yr at \$1.20

FUEL ECONOMY INFORMATION PROGRAM

In 1975, Congress passed the Energy Policy and Conservation Act (EPCA) which established Corporate Average Fuel Efficiency (CAFE) standards as well as a testing, labeling and information program to assist consumers in purchasing new cars. One aspect of the information program was the *Gas Mileage Guide*, a publication listing the fuel economy of cars manufactured at a given time. Car dealers were required to have the Guide available for customers.

The law also required an label to appear in the windows of new cars that lists the miles-per-gallon (MPG) of the car for city and highway driving, the estimated annual fuel cost associated with its operation, and the fuel economy of comparably-sized models. Such labeling began in 1974 with a voluntary program administered by the EPA and the Federal Energy Administration (FEA), a precursor of the Department of Energy. The EPCA made the program mandatory as of March, 1976. Although EPA is responsible for testing cars, and preparing the *Gas Mileage Guide* and the MPG labels, responsibility for other aspects of the fuel economy program is shared with three other federal agencies: DOE, Department of Transportation and the Federal Trade Commission. (U.S. House, 1980)

The labeling program had a number of problems initially with the measurement of vehicle mileage. A Congressional Committee hearing noted, "As the public quickly discerned, the EPA mileage figures were not an accurate measure of on-road performance." (U.S. House, 1980) According to Elder Bontekoe of EPA's Office of Mobile Sources, the tests were not run according to "real world" conditions and considerably overestimated the actual mileage automobiles could be expected to achieve. In response, in 1985 a formula was worked out to adjust the mileage for actual city and highway driving conditions. This new system has been found to be fairly reliable. (Bontekoe, 1993)

A few changes have been made to the format of the label since the program's inception. Initially showing both highway and city ratings for MPG, 1979 EPA regulations removed the higher (and less accurate) highway rating, and changed the wording to "Estimated MPG." Car makers were still allowed to use both ratings in advertising, so there was a concern that consumers were "being misled by nightly television advertisements and auto showroom displays featuring extravagant gasoline mileage claims based on their government's own testing program." (U.S. House, 1980) After changes were made in 1985 to improve the accuracy of the tests, labels again bear estimated MPG ratings for city and highway use.

A study performed in 1976 found that 72 percent of new car buyers were aware of the Fuel Economy Information Program and more than half had seen the mileage label on the car they bought (while only 7 percent were aware of the *Gas Mileage Guide*). Also, buyers who were aware of the label bought cars with higher mileage than did unaware buyers, with the mileage of their new car more than 20 percent higher than their old vehicle. Unaware buyers achieved almost no increase in mileage. On the other hand, 64 percent of buyers did not believe the MPG estimates. (Abt, 1976) Two important considerations for interpreting this study are

that the OPEC oil embargo, in the winter of 1973-74, was fresh in car buyers' minds at that time, and that the program was still quite new.

The effectiveness of the EPA gas mileage labeling program is largely dependent on public opinions toward gasoline use and conservation. Due to the low price of gasoline in recent years, mileage has become a less important consideration for many car buyers. "We perceive that the numbers are well accepted and the program has a fair degree of recognition in the marketplace," said Mr. Bontekoe. "A lot of people don't *care*, but they do seem to be paying attention."

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NONTOXIC, NATURAL & EARTHWISE

NONTOXIC, NATURAL & EARTHWISE

Nontoxic, Natural & Earthwise is a consumer guide written by Debra Lynn Dadd, published in 1990. It is an update of her 1984 book *Nontoxic & Natural*, which did not address environmental issues *per se*. In this book she evaluates fourteen categories of products based on five criteria: product ingredients, packaging, energy use, compassion to animals and social responsibility. In evaluating products she relies entirely on information provided by manufacturers, and cautions that "they are meant to be loose guidelines, not absolute descriptions." (Dadd, 1990)

For each criterion she gives an award to products that are notable. Under product ingredients, for example, she awards three different levels, nontoxic, natural, and the highest award, "earthwise": "Earthwise products are truly good for the Earth and for us; they are not merely the least harmful that happen to be available." Such products include organically grown food, unbleached recycled paper and skin-care products made from organically grown ingredients.

Products are rated according to an ideal for all products, "so you'll know that an earthwise product will meet the same standards whether it is apple juice or a sweater." The following list describes the requirements of an ideal product:

- be practical and durable, well-made, with a timeless design;
- satisfy a functional and/or aesthetic need, and not be superfluous clutter;
- be made from either:
 - renewable plants grown and harvested in an organic, sustainable way (or recycled) and processed in a manner that is environmentally benign;
 - animals raised in a way that is environmentally benign and in a place where they are treated humanely; or
 - recycled, nonrenewable petrochemicals and metals (as opposed to mining new nonrenewables);
- be healthful for humans to use, and be biodegradable or recyclable;
- be made with renewable energy and be energy-efficient in manufacture and use;
- be responsibly packaged or not packaged at all;
- not be tested on animals; and
- be provided by businesses with socially responsible business practices.

Dadd criticizes seal-of-approval programs like Blue Angel for "promoting the best of existing products", since they "do not set *new standards* that take a creative leap into the realm of truly healthful and environmentally responsible products." She also admits that the standards she has set "are more stringent than any I've seen, but I believe it is vitally important to move in this direction." (Dadd, 1990)

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THE GREEN CONSUMER and THE GREEN CONSUMER SUPERMARKET GUIDE

THE GREEN CONSUMER and THE GREEN CONSUMER SUPERMARKET GUIDE

The Green Consumer was first published in England in 1988, written by John Elkington and Julia Hailes. In 1990, the book was published in the United States, with additional writing by Joel Makower. Its primary goal is not to rate specific products but to give an overall approach to being an "environmental shopper." *The Green Consumer* has been very popular, appearing on bestseller lists, selling more than 100,000 copies in the U.S. and over 250,000 copies in the U.K. A second edition of the book was published in the U.S. in 1993.

The Green Consumer Supermarket Guide, published in the U.S. in 1991, was written as a companion to *The Green Consumer* to include "brand-specific information on hundreds of the best and worst products." It contains much of the same information, but where *Green Consumer* covers a wider range of consumer goods, such as automobiles, appliances and furniture, the *Supermarket Guide* is shorter and geared more toward supermarket goods. The book attempts "to give an environmental tour of the supermarket aisles, offering information and insight into how to view your purchases through a 'green' lens."

The book also gives more information about specific brands, and includes a rating system for products. "We have provided names of hundreds of products we think you should either seek out or avoid, based on the product's packaging, contents, and on the environmental records of their manufacturers."

The book does not rate all categories of supermarket products, nor all products within a category. Its standards vary according to "the state of the art" rather than "seeking an unattainable perfection." The "state of the art" is determined using "examinations of packaging types, research into ingredients, interviews with experts, label information, product data sheets, databases about companies' environmental records, and other journalistic and research techniques." Information on the environmental performance of companies was provided by the Council on Economic Priorities, authors of *Shopping for a Better World*.

Products are rated from ten food categories (such as beverages, snacks, and breakfast cereals) and eight non-food categories (e.g., batteries, paper products, pet foods). Those rated highly are awarded one or more of three logos: a beaker indicating a product is "rated highly for its contents," a bow (such as on a birthday present) indicating a "product rated highly for its packaging," and a factory building for a highly rated manufacturer. If a product is rated poorly, it receives the same logos with an X superimposed.

The rating criteria are presented as brief discussions of the relevant environmental impacts of each product category, in sections titled "What's the Problem?" Although these discussions may touch upon many environmental impacts, awards are often given for only certain reasons. In the discussion of coffee, for example, it is noted that decaffeinated coffee is processed with chemicals "similar to those used in dry cleaning." However, since "there is no information available on the environmental impact of such chemicals" coffee products are rated for their packaging only.

In addition, *Supermarket Guide* does not always disclose reasons for its ratings of specific products or companies. With coffee "any brand packaged in a steel can or glass jar" is awarded for recyclable packaging. However, only Melitta coffee is rated highly for packaging, contents and the manufacturer, although no reasons are given.

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OTHER ENVIRONMENTAL CERTIFICATION PROGRAMS

OTHER ENVIRONMENTAL CERTIFICATION PROGRAMS

In addition to the labeling programs described above, a number of others are in planning, have been dropped after plans were made, are peripheral or obscure, or did not have information available at the time this report was prepared. Such programs are included here in an attempt to be comprehensive. Also, some of the proposed programs, such as the United Kingdom's, though not enacted, offer interesting approaches to environmental labeling.

Organized Labeling Programs, but Not Yet Active

Some of the following countries have organized certification programs, and may be actively awarding labels, although we have not been able to confirm this.

• AUSTRIA

Legislation implementing Austria's Ecolabel program went into effect on April 26, 1991. (Ministry of Environment, Youth and Family, 1993) To date, standards have been set for 13 product categories and the program is reported to have awarded its first labels in September 1992, to tissue paper, refrigerators, and paper bags. (*Warmer Bulletin*, 1992)

As of mid-1993, there are award guidelines for the following product categories:

- refrigerators and appliances for cooling
- varnishes
- sanitary paper
- fine paper
- exercise books
- washing machines
- wood
- wooden furniture
- filing systems
- sealing varnishes
- water-saving WC-cisterns made of chlorineless plastics
- electronic control systems for sanitary installations
- reprocessing of toner-modules, ribbon cassettes and ink-cartidges (Ministry of Environment, Youth and Family, 1993)

According to the OECD, the program is jointly administered by the non-governmental Association for Consumer Information, the "certification association" ARGE Qualitywork, the Ministry of Environment, Youth and Family, and a Council that serves as an advisory body to the Minister. This Council is composed of environmental science experts and representatives of consumer and environmental groups, standards and industry associations, and the government departments for trade and environment. (Salzman, 1991)

Product categories are proposed to the Ministry of Environment, which prepares a background report for the Council. The Council makes a recommendation to the Ministry, which has final say on which product categories will be pursued. An expert group, selected by the Association for Consumer Information, establishes criteria for each product category based on an assessment of environmental impacts throughout the life cycle of the product. The group uses the life cycle matrix prepared by the German Blue Angel program to measure "raw material usage and energy consumption, waste production and emissions, and disposal." Proposed criteria are submitted to the Council, which comments and passes them on to the Ministry.

When criteria are finalized, ARGE Qualitywork oversees product applications, testing, and contracts for the use of the award. Fees for use of the label depend on the sales of the product, ranging from \$500 to \$4,500 for the two years the award is valid.

In addition to an label, Austria has a law regulating the labeling of tropical timber. Part of the law requires all products containing tropical timber to bear the phrase, "Made of tropical timber," or, "Contains tropical timber." The law also provides for a voluntary seal-of-approval for products made of wood provided "from sustainable forest management." This program would be run by the Ministry of Environment, Youth and Family, with consultation from an Advisory Committee for Tropical Wood. (Gatt, 1992) The law was introduced in September 1992, apparently under pressure from environmental groups seeking a boycott of timber logged from rainforests. (*New Scientist*, 1993) Recently, however, the Association of Southeast Asian Nations (ASEAN), including Malaysia and Indonesia, have complained to the council of the General Agreement on Tariffs and Trade (GATT) that the law constitutes a technical barrier to trade, blocking exports from their countries. They argued that the law unfairly discriminates against tropical timber, since it does not address all types of wood products, and that the action was taken unilaterally by Austria, without the participation of the international community. (GATT, 1992) Malaysia and Indonesia have reportedly threatened an economic boycott of Austria. It is possible that the labeling law could be repealed as a result. (*New Scientist*, 1993)

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• CHILE

Plans have been made in Chile for a private sector environmental labeling program. The plans were presented in a paper presented at the United Nations Environment Program's Global Environmental labeling Seminar, in September 1991, by the Casa de la Paz (House of Peace). The Casa de la Paz is a non-profit organization "dedicated to the promotion of peace and the protection of the environment." (Casa de la Paz, 1991) The program is planned to be a voluntary, positive certification program "inspired mainly by the Canadian and German systems." The project is being sponsored by the Minister President of the National Commission on the Environment.²¹

Administrative Structure

Although currently promoted by Casa de la Paz, the program will be administered by the Chilean Institute for Environmental Recognition (ICRA), also a non-profit private foundation. ICRA will bring together a Board, which will be assisted by an Executive Secretary and a Jury.

- The Board will consist of more than six members appointed by "representatives of the government, universities, the business sector, the scientific world," and environmental and consumer groups. The Board will be in charge of planning, managing and controlling the program.

- The Board will be assisted by an Executive Secretary and a Jury, described as a "decision making, advisory and consultative body." The Jury will be composed of people with "an adequate technical preparation and linked to industry, commerce, environmental organizations, consumer and workers' organizations and the media."

Process

At the time of the Seminar, the process of setting criteria and certifying products had not been determined. "General Criteria," which all awarded products must meet, regardless of criteria for specific categories are as follows:

- It must not put consumers' health at risk.

- It must not significantly damage the environment via its production, transportation, use or disposal process.

- It must not consume a disproportionate amount of energy in those processes.

²¹ It is unknown whether this group is governmental or private.

- It must not produce unnecessary waste (via excessive packaging in relation to its manipulation needs, useful life, etc.)
- It must not utilize materials derived from endangered species or environments.
- The label of the certified product must indicate the specific reasons which justified its certification, as well as the environmental characteristics which are the bases for this distinction.
- As the logo will be granted to products only, the producer will not be able to use this fact to promote his company or to highlight other products of the same line (or of its production) which are not authorized to use the logo. (Casa de la Paz, 1991)

The award will be given for a period of 2 to 3 years, with standards raised to require continued improvement. The program plans to be self-financed through fees charged for certification. Applicants will also pay for laboratory expenses for testing products. The program will start gradually, determining environmental impacts for products that "will not cause major difficulties," and work up to more complex cases.

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Planned, Cancelled or Unconfirmed Labeling Programs

Other environmental certification programs are rumored, unconfirmed, have been cancelled, or have been approved/planned but have not been organized yet. The best documented of these is the United Kingdom's environmental labeling program which was planned extensively before being set aside in favor of the EC ecolabel.

• CZECH REPUBLIC (CZECHOSLOVAKIA)

The government of the Czech Republic began preparing an "Environment Friendly Product" labeling program in 1991, which is expected to be operational in 1993. Proposals have been made for the program's organization, financing, logo and legal authority, and await approval by the Czech government.

The program is based on the "experience of already established programs" in Austria, the Nordic countries, Germany and Canada. It is "in compliance with" the EC regulation setting

up the EC ecolabeling program. Harmonization is an important issue for the Czech program, "to enable the mutual acceptance of this award" in other countries.

General Principles

To qualify for an award, products must first meet health, safety, and hygiene standards. Priority will be given in setting product categories to those products that "cause substantial damage" to the environment. A life cycle approach will be taken to assessing products, defined as including use of "raw materials, energy consumption, production, function, regeneration [and] disposal." Products already regulated, such as food, beverages and pharmaceuticals will be excluded from the program.

Administrative Structure

The Ministry of the Environment is the "director and coordinator" of the program. The Ministry will appoint the Council, approve criteria set for product categories and enforce provisions of the contract for use of the award.

The Council is the "control body" of the program, and includes representatives of environmental and consumer protection groups, "scientific and technological corporations," industry and trade groups. It will "consider and recommend" criteria for product categories and award the logo to products that meet the criteria. The program will hire accredited laboratories for testing products that have been submitted to the program.

The Agency acts as the executive body, or secretariat, of the program. It will receive applications for awards, make contracts with companies whose products are given awards and charge fees. There will be an application fee and, for those companies that receive an award, an annual licensing fee based on the volume of manufacture. The award will be valid for at most three years and awarded products will be audited to ensure that they continue to meet the criteria of the award. The program is hoped to be self-financing "in its final stage at least partially."

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- DENMARK

The Danish Ministry of Environment was given legal authority in 1989 to create an environmental labeling program. Although Denmark is a member of the Nordic Council, it is waiting to assess the European Community ecolabeling program before joining in either program. (Salzman, 1991) Denmark is participating in setting standards for EC, preparing draft standards for paper products. (Bethge, 1991)

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- IRELAND

According to a representative of the Irish Department of Environment, "In light of the imminent implementation of the EC scheme, the introduction of a separate Irish scheme is unlikely." (Linehan, 1992) The recent Environmental Protection Agency Act provided for development of an environmental labeling program "having regard to any act of an institution of the European Communities' relating to a Community labelling scheme." The Act allows the Environment Agency to determine product categories and services, set standards and procedures, carry out testing, publicize the program, and monitor the use of a "special symbol" awarded to products and services. The Act also determines that it shall be an "offence" to use the symbol without approval of the program. (Irish Congress, 1992)

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- PORTUGAL

According to the OECD report, a legislative proposal was discussed within the Portuguese government and was expected to be approved in early 1991. This legislation would create an environmental labeling program to promote "ecoprodutos," or eco-products. The program would be entirely governmental, with representatives from the ministries of environment, consumer and

industry. Portugal is a member of the EC and is expected to participate in the EC environmental labeling program.

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• SWITZERLAND

According to the Federal Office of Environment, Forests and Landscape, "Switzerland will not introduce its own national environmental label [in order] to participate in the EC scheme." Switzerland is not, however, a member of the European Community. Action on their involvement was not expected before the end of 1992. In 1991, the Swiss government commissioned a study on the feasibility of a national environmental labeling program. (Salzman, 1991) Switzerland has also passed a specific law regulating misleading environmental advertising (Scammon and Mayer, 1991).

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• UNITED KINGDOM

The British Government has held the position for several years that a European Community Labeling program would be preferable to multiple independent national programs for both consumers and manufacturers. On the other hand, it has also said that they are strongly committed to having an environmental certification program, and if the EC program failed to become active, it would set up a separate UK program. Since the EC ecolabeling regulation was adopted by the Commission on March 23, 1992, and was expected to come into operation later in 1992, the UK Department of the Environment stated that the UK will not have a national program. (Watkinson, 1992)

The United Kingdom has been actively involved in developing the EC ecolabeling regulations, and is the lead country for drafting criteria on washing machines, dishwashers, hairsprays, soil improvers, and light bulbs. Under the EC regulation, each member state sets up a Competent Body to administer the program in that country. The Competent Body in UK, starting in July 1992, is a "dedicated non-departmental public body," with a secretariat bringing together officials from the Department of the Environment and the Department of Trade and Industry. (Department of the Environment, 1992)

While the UK will not have its own national environmental certification program, the Department of the Environment did set up the National Advisory Group on Eco-Labeling (NAGEL), which researched other environmental certification programs. They published a white paper, *Giving Guidance to the Green Consumer — Progress on an Ecolabelling Scheme for the UK*, which discusses the main issues surrounding certification programs, and outlines how the UK might set up a national program. (NAGEL, 1991) In addition, the Environment Committee of the House of Commons held hearings in May, June and July of 1991 to gather information for its *Eighth report: Eco-Labeling*. Published in September 1991, this report made recommendations that "the Government proceed with its preparatory work on eco-labelling, with a view to being in a position to introduce" a program "which would be able to operate under a national or a European scheme." (Environment Committee, 1991)

General Principles

The Advisory Group put forth three main goals for an environmental certification program in the white paper:

- "To provide consumers with accurate information on the environmental acceptability of products in order that they can exercise an effective and informed choice;
- "to encourage business to produce products which are environmentally less harmful, both as a contribution to protecting the environment, and to promote the competitive position of UK industry; and
- "to ensure arrangements for environmental labelling are consistent with the development of the Single European Market." (Nagel, 1991)

They also stated that an environmental certification program should be voluntary and self-financing, should cover all consumer products except food and drink, should award pass/fail labels, and should have an award system that was transparent and credible to consumers and manufacturers.

NAGEL advised that choosing product categories for the program, especially in the early stages, should be guided by practical considerations. The first product categories to be analyzed should be those generally perceived to be harmful to the environment, that are easier to analyze, that are from industries that would be cooperative, and that are widely known and used. Since

it is important for a program to build credibility and consumer support, the program must set product standards quickly, be high profile, generate publicity, and act in areas that are seen as important by consumers. They suggested that it would therefore be more fruitful to certify paper, paint, or television sets rather than snowmobiles.

Although the science of life cycle analysis is not well developed, "a start must be made somewhere." The Advisory Group recommends using the EC matrix as a guide, but acknowledges that "there will be data gaps." They suggest that where there is a lack of quantitative data on the impacts of a product, it may be possible to reach consensus based on "qualitative material." In spite of the difficulties of performing life cycle research, and the inherent limitations, "unless the whole life cycle is reviewed fairly thoroughly at the outset, the next stages of the exercise may always be open to challenge."

Like the EC environmental labeling program, NAGEL proposed a two-tier system of standards. With this system, a product must meet a number of minimum standards before being considered for the primary standards. In the case of washing machines, for example, the primary environmental impacts were found to be energy, water and detergent use during the use phase of the life cycle. Secondary considerations were packaging made of sound materials and user instructions that are attached to the machine. And like all other environmental certification programs, they suggested that products given awards "should not compromise on safety or performance."

Administrative Structure

In their paper, NAGEL considered five different options for the structure of the program, ranging from being run entirely by a private group to being run entirely by a government Department. They decided that the best option would be a "non-departmental public body" operating "at arms' length" from the government. Although this group would be associated with the government, NAGEL advised that it should be perceived as independent from government pressures. Conversely, it should be associated with the government "to furnish it with an air of authority" and government funded so that it can be free from industry pressures.

In September 1991, before it was decided that the United Kingdom would not have its own ecolabeling program, the Department of the Environment announced the formation of a National Ecolabeling Advisory Body for a UK environmental certification program. The Advisory Body would be composed of twelve to fifteen people representing manufacturers, retailers, and environmental and consumer groups, "with additional expertise being called in as appropriate." (Environment Committee, 1991) This Body would be able to function as a Competent Body in an EC program or as the certification body in a national program. Members of the Body would be chosen by the Ministers of the Department of Trade and Industry and the Department of the Environment, which would also provide funding for the program, £1 million per year for 3 years.

The functions of this Advisory Body would be to propose product categories; to determine, on the basis of life cycle analysis, appropriate criteria for certification; to review categories and criteria at regular intervals; to certify products which meet the criteria; and to promote and monitor the program.

Award Process

The operation of the program would be similar to that of other environmental labeling programs, such as Canada's Environmental Choice or Germany's Blue Angel. In order to keep the trust and involvement of industry, environmentalists and consumers, it must have clearly drawn pass/fail criteria, draft criteria should be open for public review before they are adopted, and applications for certification should be secret to protect companies from public embarrassment for failing the tests. Also, the logo should be legally protected against misuse, there should be an appeals procedure, ongoing monitoring of companies who receive awards, and a limited time period for the award, with subsequent reapplication.

NAGEL noted that "all the evidence from ecolabelling schemes in other countries suggests that the label is a real competitive advantage" for products. Thus, consideration must be given on how to treat non-EC or non-UK applicants fairly, "so that all applicants are treated on an equal basis." Like other programs, the UK program would charge an application fee together with an annual licensing fee, with the objective that the program would be self-financing eventually. To be fair to small businesses, they recommend a "banded" fee structure, with lower charges for small firms.

One difference from other environmental certification programs is that NAGEL believed independent product testing may not be necessary, and that manufacturers' data may be sufficient to judge products. They would rely on marketplace competition to reveal any instances of cheating on the part of manufacturers. Most other programs rely on third party testing to ensure unbiased judgement; Japan's Ecomark does accept manufacturers' testing data, although they can ask for third party verification if necessary.

The paper states that communication to the public and to industry is vital to the success of a program. Germany's Blue Angel took a long time to make an impact because "too little effort was put into promoting it in the early years," while Canada deliberately did not promote the Environmental Choice Program until it had a sufficient number of certified products already in shops. NAGEL spells out three main phases of promotion: inform industry that the program is being developed and involve them in developing product categories and criteria; involve consumer and environmental groups; and get the message across to the general public. The public should not be informed too early, since "it would be disastrous to whet consumer appetite too long before the meal is ready."

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• YUGOSLAVIA

In April 1991, the Yugoslav government passed a law that provided for an environmental labeling program "to motivate the public's purchase of ecologically-sound products." (OECD, 1991) Before this official government activity, a number of manufacturers used logos with names like "Green Apple" and "Power of Nature" to promote organic foods, non-phosphate detergents, reduced CFC refrigerators and sustainably harvested timber products. There had also been activity in Yugoslav republics like Slovenia, where rules for labeling timber products were adopted based on standards from the Blue Angel program.

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• OTHERS

Israel, Brazil, and Slovenia have "sought input" from Green Seal "in developing their own environmental label programs," (Kostant, 1993) while the Canadian Standards Association "has been approached by a number of ... countries" including Mexico, Syria and Belgium "for information about its work on Environmental Choice." (CSA, 1990) Also, according to UNCTAD, Brazil's program, the Selo Verde ("Green Seal") "is being developed in consultation with the Blue Angel Program." (UNCTAD, 1993)

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Organic farming certification programs:

Organic farming certification is perhaps the most widely spread form of environmental labeling. "Government labelling programmes for ecological agriculture [organic food products] have been introduced in ... Denmark, France, Spain, the United Kingdom. Private labelling programmes are in operation in ... Australia, Austria, Belgium, Brazil, Canada, Finland, Hungary, Ireland, Israel, Italy, Japan, Luxembourg, Morocco, Netherlands, New Zealand, Norway, Poland, Portugal, Senegal, Sweden, Switzerland and the U.S.A." Also, the International Federation of Organic Agriculture Movements (IFOAM) "is in the process of launching an international accreditation programme for such labels, with the aim of introducing an international label for products from ecological agriculture." (Pedersen, 1991)

In the United States, a number of states have regulated the use of organic food claims, as has the Federal government, with the Organic Foods Production Act of 1990. In addition, several third party certification programs are active in the U.S., including California Certified Organic Farmers, Farm Verified Organic, Organic Crop Improvement Association, Northeast Organic Farming Association, Organic Growers and Buyers Association, Maine Organic Farmers and Gardeners, and NutriClean, run by Scientific Certification Systems. Most of these are local or regional programs.

The Northeast Organic Farming Association (NOFA) has certified organic farms and fields since 1986. They consider it a "service" to their member farmers more than an labeling program; they charge a sales-based fee of only \$100 to \$750 per year, which does not meet the cost of the certification. On average, they certify between 25 and 40 farms or fields per year, for a one year period. The farms that seek certification usually do so in order to sell to wholesalers who require third party certification of organic claims. Farms that sell directly to the public, through farmers' markets for example, generally find it unnecessary to be certified.

In order to be certified by NOFA, a farm must meet standards for "good organic management practices," including crop rotation, natural pest control and maintaining soil

fertility. Unlike some certification programs that allow minimal or reduced use of chemicals, NOFA does not allow any use of inorganic chemicals. (Rawson, 1993)

NutriClean is a program "which certifies farming practices, such as organic and integrated pest management, that reduce pesticide use and lead to food that is lab tested free of any detected pesticide residues." (SCS, 1991) Introduced in 1984, the program tests fruits and vegetables mostly for the west coast market. Unlike NOFA's certification, a product may be grown with the use of pesticides and still receive an label, as long as no pesticide residues are found on the product tested. Fees are charged for tests of fields and products, \$1,000 to \$2,000 per field for each product certified. (Silver, 1990) By 1991, NutriClean had certified over 300,000 acres of fruits and vegetables.

One provision of the Organic Foods Production Act is an accreditation program for private labeling operations. The National Organic Standards Board is advising the U.S. Department of Agriculture (USDA) on regulations being promulgated to implement the law. One proposal would set up a two-tiered accreditation program: one for larger programs involved in export would meet standards set up by the European Community; the other would be less stringent for smaller programs that deal directly with farms. The administration of the programs would be paid for by the USDA, while user fees would cover the costs of accreditation, evaluations of certification programs and enforcement. (Henderson, 1993) Final regulations are expected in the Fall of 1993.

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